

SIEMENS

SIJECT 16i Operation Manual Software Version 1

User Manual

11.2003 Edition

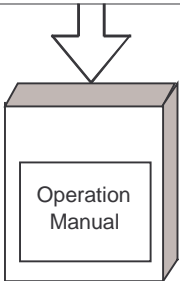
User Documentation

SIJECT 16i Document Structure

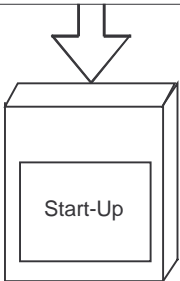
General Documentation: Catalog



User Documentation: Operation Manual



Technical Documentation: Start-Up





SIJECT 16i
Operation Manual
Software Version 1

User Manual

Valid for

Control System
SIJECT 16i

Software Version
1.10

11.2003 Edition

Introduction	1
Operator Panel Keys	2
SIJECT OP15B Screen	3

SIJECT® Documentation

Key to editions

The editions listed below have been published prior to the current edition.

The column headed "Note" lists the amended sections, with reference to the previous edition.

Marking of edition in the "Note" column:

A New documentation.

B Unchanged reprint with new order number

C Revised edition of new issue.

Edition	Order No.	Note
12.2000	6AT1931-5AB41-0BA0	A
11.2003	6AT1931-5AB41-0BA1	A

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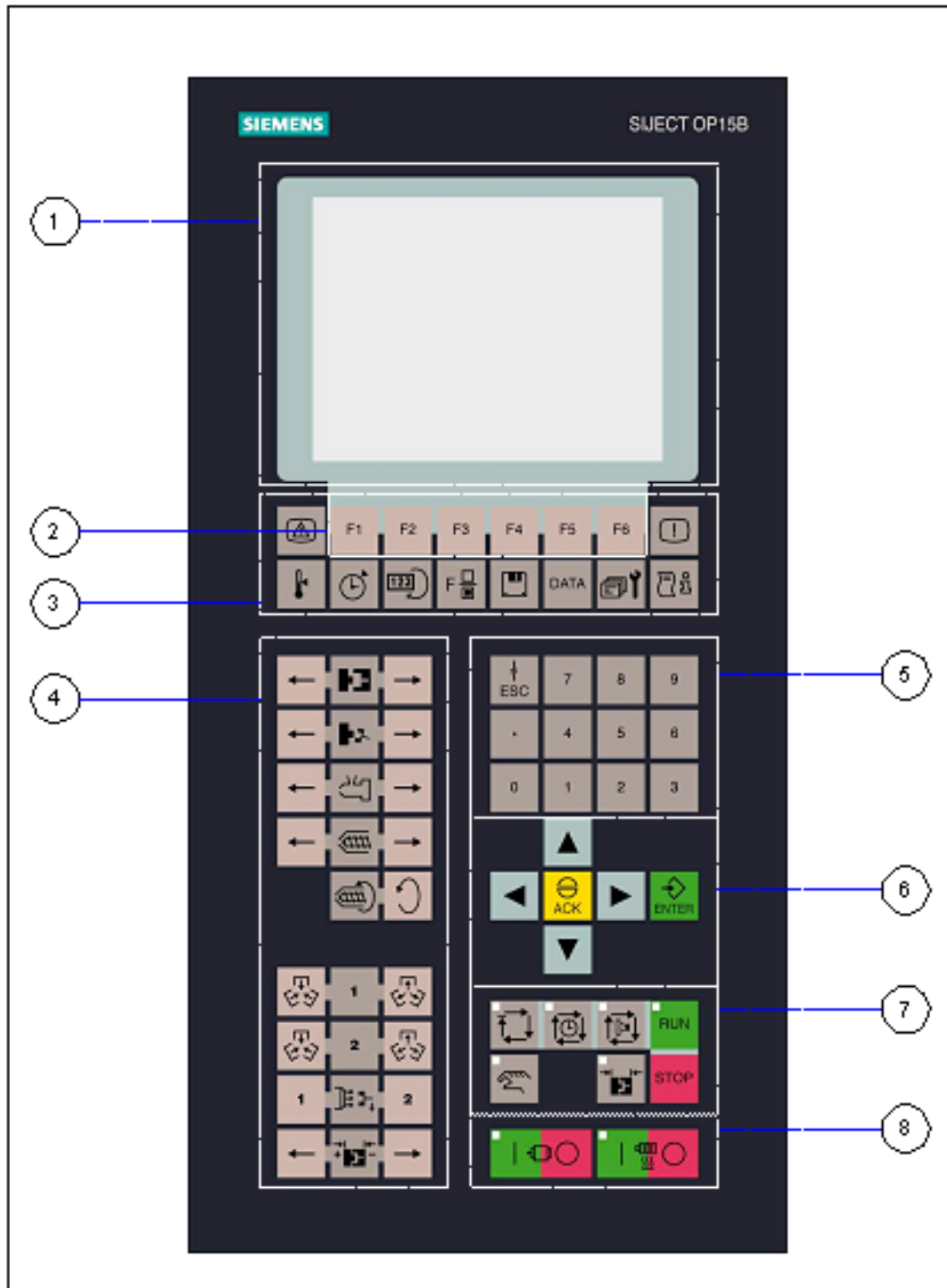
We have checked that the contents of this document correspond to the hardware and software described. Nonetheless, differences might exist and we cannot therefore guarantee that they are completely identical. The information contained in this document is reviewed regularly and any necessary changes will be included in the next edition. We welcome suggestions for improvement.

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Subject to technical changes without notice.

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Description of softkey area

Explanation of the function of each softkey area is in Table 1-1.

Table 1-1 Description of softkey area

Operating area	Key numbers	Meaning
① Liquid crystal display	-	Display different control screens.
② Soft keys	6 keys	Call selected pictures and functions from different screens.
③ Screen hot keys	10 keys	Press each key and corresponding screen will be displayed. Parameters setting, production monitoring and data saving can be executed.
④ Manual operating keys	26 keys	Call the parameter-setting screen with the key, then control the machine movement manually.
⑤ Number keys	12 keys	Input number parameter. Create recipe data.
⑥ Cursor keys	6 keys	Move the cursor to the required position with "Cursor key", then press "Enter" key to confirm the setting. Or, when screen displays the message "press ACK key", press "ACK" key to confirm.
⑦ Operating mode keys	7 keys	Select machine mode with "Mode key". When in Semi Auto/Auto mode, press Run/Stop key to start/stop the Semi Auto/Auto mode cycle. Or, use "Manual Mode" key to select manual mode, then you can press manual control key for manual movement. Or, press "Mold adjustment key" to select mold adjustment mode, then you can do manual or auto mold adjustment.
⑧ Motor keys and heater keys	4 keys	Control the motor start/stop, and heater on/off.

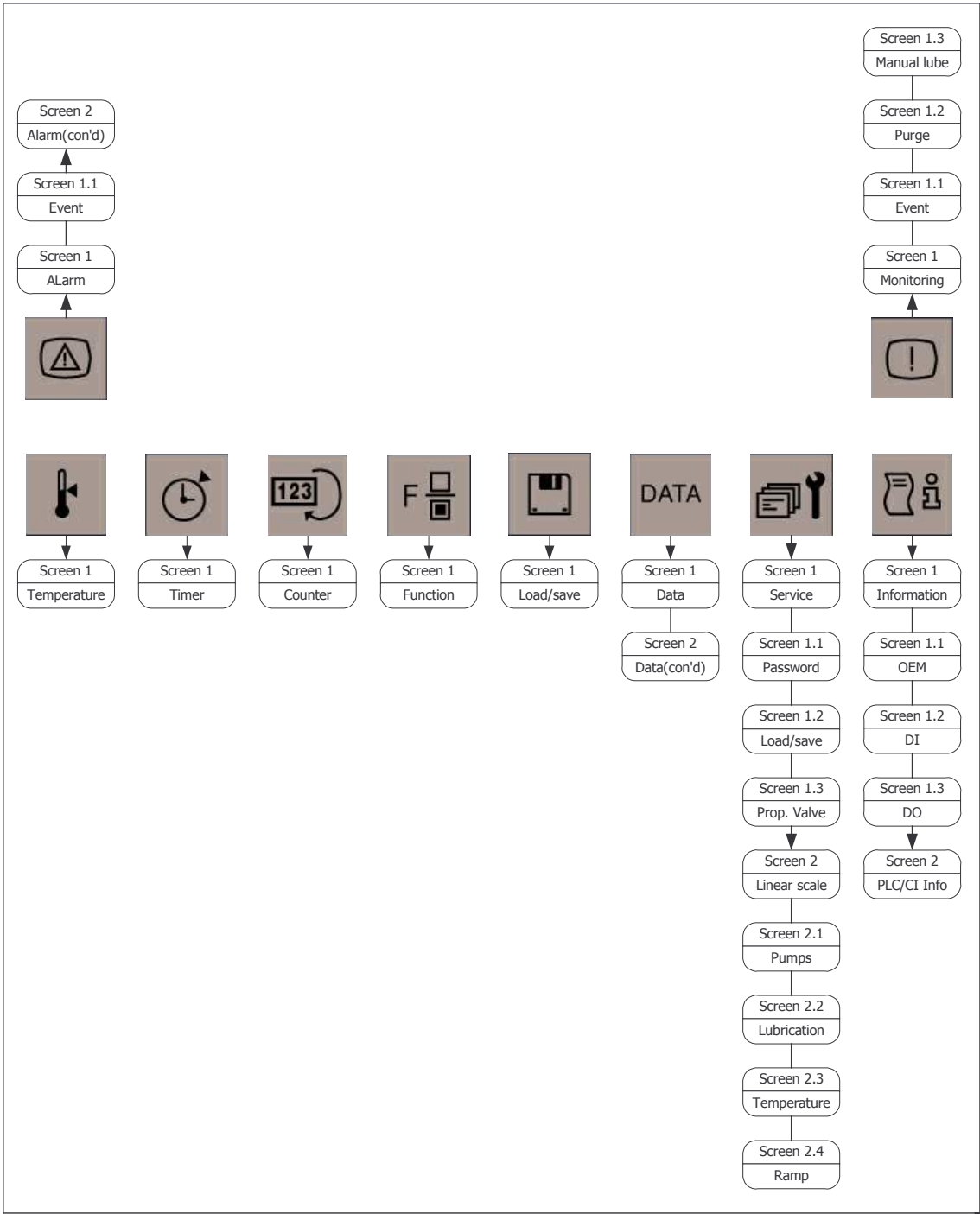
1.2 Overview of screens

Hot key screen structure

These screens are configured in different nested level. For instance, the **Service screen** is designed in multistage structure, It is oriented to the OEM-customer. Therefore it comprises the most important function parameters for OEMs. Altogether ten different screens can be displayed.

All hot key screens are listed in Table 1-2 for reference.

Table 1-2 Hot key screen structure

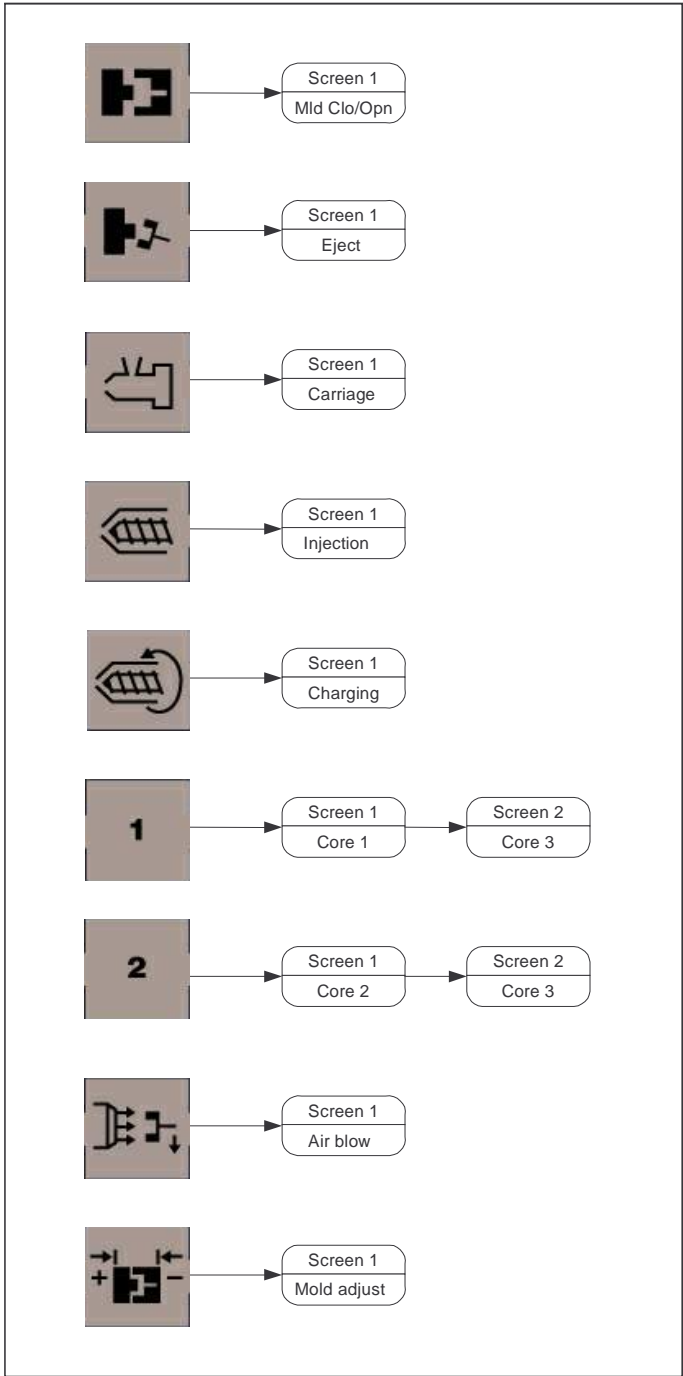


Screen structure
of manual
operating keys

The screen structure here is relative simple in comparison with hot key screen structure. Most of them have only one level, and the screens of core 1 in/out and core2 in/out have the second level, that is, they are used for core 3 function.

The parameters like position, pressure, flow, delay time, counter and mode selection can be set in these screens.

Table 1-3 Screen structure of manual operating keys



1.3 Working process of injection molding machine

General

The most important components in the injection molding machine are:

- Injection unit
- Mold close unit
- Electrical and hydraulic control

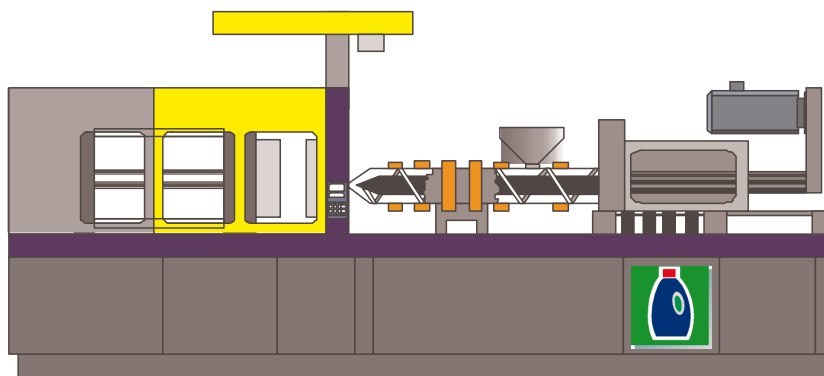


Fig. 1-2 Injection molding machine

SIJECT 16i

SIJECT 16i is a compact control system. It can be widely used to control injection molding machine from low end to middle and high end customer.

Please see the manufacturer documentation “**SIJECT 16i Start-up**” for detailed information.

Control process

The configuration of individual injection molding machine can be different, but the working process should be implemented in a similar way. Thus we describe it roughly in the following diagram.

It is provided in the diagram that the Core-in acts before Mold Close Start or during Mold Close Process, the Core-out acts before Mold Open Start or during Mold Open Process.



Caution

Other functions not described in the following diagram might be executed in the control system. It is only for reference.

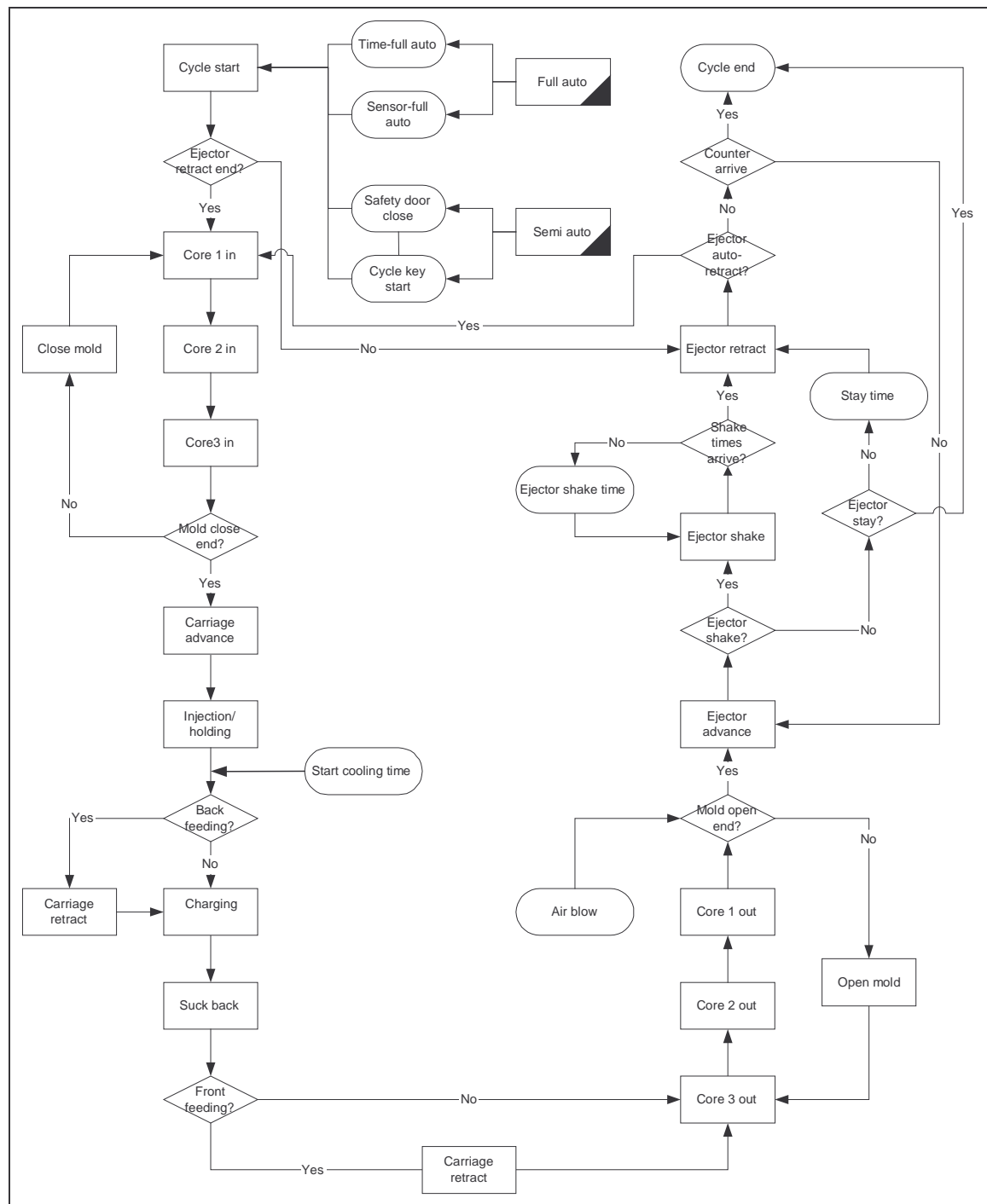


Fig. 1-3 Flow chart for one cycle in injection molding machine

2 Operator panel keys

2.1 Liquid Crystal Display (LCD)














General	<p>The LCD display with CCFL back-light has a good performance to display:</p> <ul style="list-style-type: none">— Alarms— Recipe data— Customer specific picture— Operation status
Performance	<p>The LCD has the following characteristics:</p> <ul style="list-style-type: none">— 320x240 pixel— 5.7", Chinese/English— the contrast can be adjusted manually

2.2 Soft keys
















General

Users can press softkey to complete different operation as well as to enter other screens.

Softkey F1:
























Softkey F1 ¹	Operation path and function
“  ”	 —»  : OEM (Original Equipment Manufacturer) specific picture
“  ”	 —»  : Event information
“  ”	Selection key
“Purge start”	 —»  —» “Purge start”: start up the purge function.
“Injection reset”	 —» “Injection reset”: execute reset function of injection counting.
“Manual Lubrication”	 —»  —»  —» “Manual lubrication”: lubricate manually

Softkey F2:




















Softkey F2	Operation path and function
“  ”	Page down
“  ”	 —»  : purge key
“Purge stop”	 —»  —» “Purge stop”: stop purge function.
“Product reset”	 —» “Product reset”: execute product reset function.
“PLC version”	 —»  —» “PLC version”: display PLC version of MMC card.
“Force output”	 —»  —» “Force output”: force output.
“  ”	 —»  —»  : Pump combination

¹ Functions can be executed, which is also applicable for soft keys in following tables.








Softkey F3:

Softkey F3	Operation path and function
"Manual lubrication"	 —» "Manual lubrication": lubricate manually
"  "	 —»  : Digital input
"  "	 —»  : save mold parameters into MMC card or CI
"  "	 —»  : increase screen contrast
" + "	 —»  —» + : increase limit value
"  "	 —»  —»  : save program into MMC card
"  "	 —»  : set the password
"  "	 —»  —»  : set manual lubrication


Softkey F4:

Softkey F4	Operation path and function
"  "	 —»  : digital output
"  "	 —»  : load mold parameters from MMC card or CI
"  "	 —»  : decrease screen contrast
" _ "	 —»  —» _ : reduce limit value
"  "	 —»  —»  : load program from MMC card.
"  "	 —»  —»  : temperature setting

Softkey F5:



Softkey F5	Operation path and function
	 —»  : proportional valve start-up
	 —»  ↓ —»  : ramp data setting

Softkey F6:

Softkey F6	Operation path and function
	Page up

2.3 Screen hot keys

General

Press each key and corresponding screen will be displayed. If the screen has more than one layer, use the soft keys of page down  to go to the next layer. Press the page up key  at right to go back to the previous screen.

Alarm key



Press Alarm key to enter **Alarm screen**, and the current alarm will be displayed on this screen. Press F1 key to enter the event record screen, and you can check the record of all events.

Temperature key



Press this key to enter **Temperature screen** where the set value of each temperature channel can be input, and the actual value of temperature channel can be displayed as well. In addition, you can choose the “heat holding” function, and you can set the tolerance of temperature control.

You can also choose the control mode of nozzle (open loop/close loop).

Timer key



Press this key to enter **Timer screen**. Every time duration can be set, such as cycle time, cooling time, mold open/close time, as well as every delay time and monitoring time.

Counter key



Press this key to enter **Counter screen**. You can set the quantity of products and the products of each mold. Also the current product quantity, number of injection and products quantity after machine power on can be displayed.

Function key



Press Function key to enter **Function screen**. The screen contrast, language (Chinese/English), selection of robot and back light functions can be set.

Load/Save key



Press this key to enter **Load/Save screen**. Mold recipe data can be saved into CI/MMC, and saved mold recipe data can be loaded from CI/MMC.

Data key



Press this key to enter **Data screen**. You can review the production data of last 10 injection cycles, including the position and time of each activity, such as injection number, the position of mold open end point, injection start point, injection end point, pressure hold end point, charging end point and ejector end point, and the time for mold hold, mold lock, injection, cycle and charging.

Service key



Press this key to enter **Service screen**. OEM can set the factory data and functions here. Nine service screens are provided, including function selection, linear scale setting, password setting, load/save setting, proportional valve setting, pump setting, lubrication setting, temperature setting and ramp setting.

When OEM has finished the start-up of injection molding machine, these parameters will normally be protected by Password 2 by OEM.

Information key



Press Information key to enter **Information screen** where the version message of OP, CI and PLC program can be read. Then press the softkey F2, and continue to display the PLC status and OP communication status.

Users can also check the operating status of each digital input/output.

Monitoring key



Press Monitoring key to enter **Monitoring screen**, which is the main screen of system. The current machine running statuses are displayed, including the positions of mold, screw, ejector; rotation speed of screw; production quantity; power on time; cycle time and current mold number.

Additionally, the purge and lubrication can also be operated.

2.4 Manual Operating Keys

General

All the manual keys  and  described below can function only after the Manual mode and Mold adjustment is running.

Mold key



Press the middle Mold key to enter **Mold screen**.

Input corresponding parameter (Position, pressure, flow and protecting time) for each step.



Mold will open continuously if you keep pressing the left key.



Mold will close continuously if you keep pressing the right key.

Mold close/open keys can be operated in combination with core in/out keys; for example, "Core in" can be done during, before or after mold close, or "Core out" during, before or after mold open.

Ejector key



Press the middle Ejector key to enter **Ejector screen**.

Now you can input corresponding parameter (Position, pressure, flow and counter) for ejector advance and retract, and set counter and ejector mode.



Ejector will retract continuously if you keep pressing the left key.



Ejector will advance continuously if you keep pressing the right key.

Repeat above-mentioned two steps to carry out multiple ejection.

Carriage key



Press the middle Carriage key to enter **Carriage screen**.

Now you can input corresponding parameter (pressure, flow and carriage retract time) for carriage advance and retract.

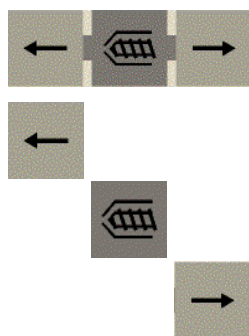


Carriage will advance continuously if you keep pressing the left key.



Carriage will retract continuously if you keep pressing the right key.

Injection key



Press the middle Injection key to enter **Injection screen**.

Input corresponding parameter (pressure, position, flow and total injection time) for injection.

Machine will inject once if you press the left key. Keep pressing the left key, the machine will come into pressure holding status automatically after injection is finished.

Machine will suck back, i.e., screw retract, if you keep pressing the right key.

Charge key

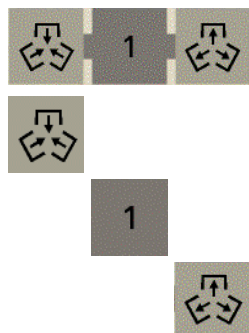


Press the middle Charge key to enter **Charge screen**.

Input corresponding parameter (Position, pressure and flow) for charging.

Screw will be charging if you keep pressing the right key.

Core 1 key

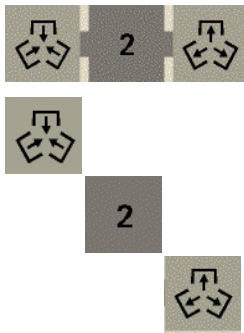


Press the middle Core 1 key to enter **Core 1 screen**.

Input corresponding parameter for core 1, such as position, pressure, flow, time and counting.

Keep pressing the left key to let core 1 in.

Keep pressing the right key to let core 1 out.

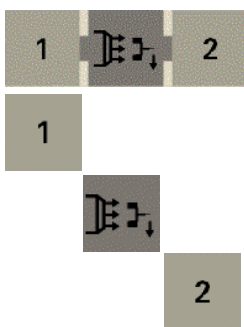
Core 2 key

Press the middle Core 2 key to enter **Core 2 screen**.

Input corresponding parameter for core 2, such as position, pressure, flow, time and counting.

Keep pressing the left key to let core 2 in.

Keep pressing the right key to let core 2 out.

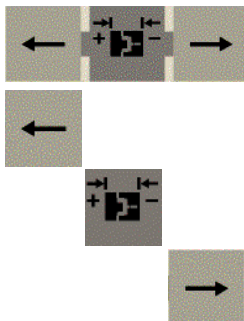
Air-blow key

Press the middle Air-blow key to enter **Air-blow screen**.

Input corresponding parameter (position and time) for Air-blow 1 and Air-blow 2.

Air-blow 1 will work if you press the left key.

Air-blow 2 will work if you press the right key.

Mold adjustment key

Press the middle Mold adjustment key to enter **Mold adjustment screen**.

Input pressure and flow for mold adjustment. There are two ways to adjust mold. When manual mold adjustment is selected, you can set pulse here. If auto mode is selected, you can set the time of adjusting.

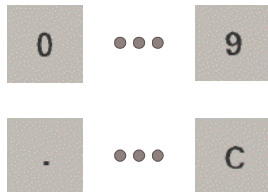
Mold adjustment retracts if you keep pressing the left key.

Mold adjustment advances if you keep pressing the right key.

2.5 Number Keys

General

The number keys comprise 0~9 numbers, decimal and Cancel key. They are used to set the recipe data.



2.6 Cursor Keys

General



The cursor keys are consisted of Cursor left, Cursor right, Cursor up, Cursor down and the ENTER key, and Acknowledge key “ACK key”



When alarm appears and the system message displays on the screen, press the “ACK” key to confirm them.

Example:

If you want to input a parameter like pressure or flow of injection, first press injection key to enter Injection screen, then use cursor keys to go to corresponding field. Input parameter using number keys, and press ENTER key to confirm your entry.



Caution

Be sure not to change any parameter during system running!

2.7 Operating mode keys

General


You can start the machine in different modes: Semi-Auto mode, Timer-Full-Auto mode, Sensor-Full-Auto mode, Manual mode and Mold adjustment mode.


When machine starts for the first time, select Semi-Auto mode, Timer-Full-Auto mode, Sensor-Full-Auto mode. The function is actuated only after the Run key is pressed, and the safety door opens hereafter. For Manual mode and mold adjustment mode, it is not necessary to use Run key.

Semi-Auto mode key



First set all the recipe data, then press this semi-auto mode key and wait for the LED on.

Press the RUN key . Machine will start automatically for one cycle.


Another cycle should be started by pressing RUN key  again, or safety door is opened/closed once.

Lubrication can be done automatically if the machine has run more times than the lubrication counter setting number.

Timer-Full-Auto mode key



Set all the parameters necessary (including total cycle time), press this Timer-Full-Auto mode key and wait for the LED on.


Press the RUN key  to start the system. The machine will execute the cycle automatically, until the set product quantity has been reached. Then the machine stops and LED off.

Lubrication can be done automatically if the machine has run more times than the lubrication counter setting number.

Photo Sensor Full-Auto mode key



Set all the parameters necessary (including part counter), press this Sensor-Full-Auto mode key and wait for the LED light on.

Press the RUN key  to start the system. The machine will execute the cycle automatically, until the set product quantity has been reached. Then the machine stops and LED off.

During this process, when a cycle is finished, the sensor will check whether the product has fallen down. If it is OK, the next cycle will run successfully. Otherwise, alarm is on and the machine will stop.

Lubrication can be done automatically if the machine has run more times than the lubrication counter setting number.

Manual mode key



This mode shall work with other manual operating keys together.

Press manual mode key and the LED is on.

In manual operating area, press the middle key to open the desired screen. Input necessary parameters and press the manual left key or right key to continue every action.

System will run continuously until you release the key, or when the timer or counter is full.

Following operations can be carried out in this mode, they are:

Mold open/close; ejector advance/retract; injection/suck back; charge; core 1 in/out; core 2 in/out; core 3 in/out; air blow 1 & 2 and lubrication/purge.

This mode can also be used to reset the parameters and clear the alarm.


Mold Adjustment mode key



This mode is especially used for mold adjustment when a new mold is installed in the machine.

Following operations can be carried out in this mode, they are:

Mold open/close; ejector advance/retract, injection/decompression, charge, mold adjustment advance/retract and lubrication.

Press this Mold adjustment mode key and mold adjustment key  to enter mold adjustment screen. Input the parameters, then press mold adjustment advance/retract key to adjust mold manually, or press auto start key to start auto mold adjustment.

To protect mold from damaging, the mold open/close in this mode should keep a low speed and invariable pressure and flow.

Run key



Run key is to run Semi-Auto mode / Timer-Full-Auto mode / Sensor-Full-Auto mode.

Stop key



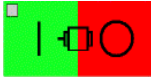
Stop key is to stop Semi-Auto mode / Timer-Full-Auto mode / Sensor-Full-Auto mode.

2.8 Motor keys and Heater keys

General

The following two sets buttons are used to control the motor and heater.

Motor key



Push the left key to start the motor. The motor will be actuated in star mode at the beginning, after the delay time it will switch to triangle mode.

Push the right key to stop the motor.

Heater key



Push the left key to switch on the heater, push the right key to switch off the heater.

3 SIJECT OP15B Screens

3.1 Hot key Screens

Startup information Power on the control system.

After power-on, the customer specific picture (CSP) will be displayed for 3 seconds.

After CSP screen, the SIJECT-OP15B Information screen will be displayed for 3 seconds. On this information screen, the PLC version, OP and CI version will be displayed.

Then, the system will change to monitoring screen automatically.



Fig 3-1 Customer specific picture screen

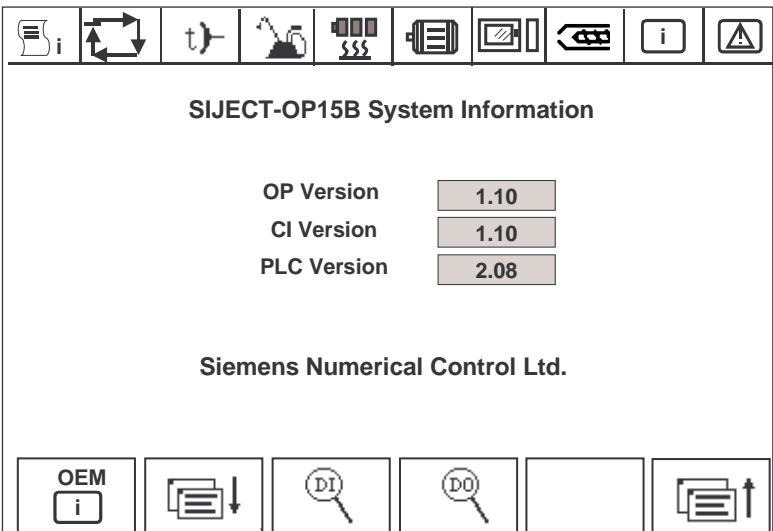


Fig 3-2 SIJECT OP15B system information screen

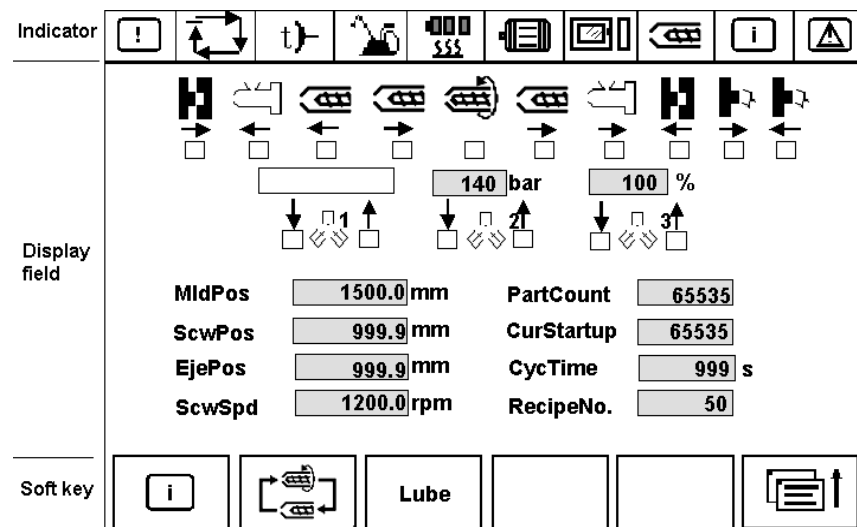


Fig 3-3 Monitoring screen

Screen description There are 3 screen fields on SIJECT OP15B monitoring screen:

- Status indicators
- Displaying field
- Soft key block

Status indicators:

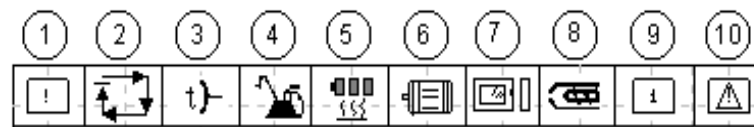





























Table 3-1 Description of Status Indicators

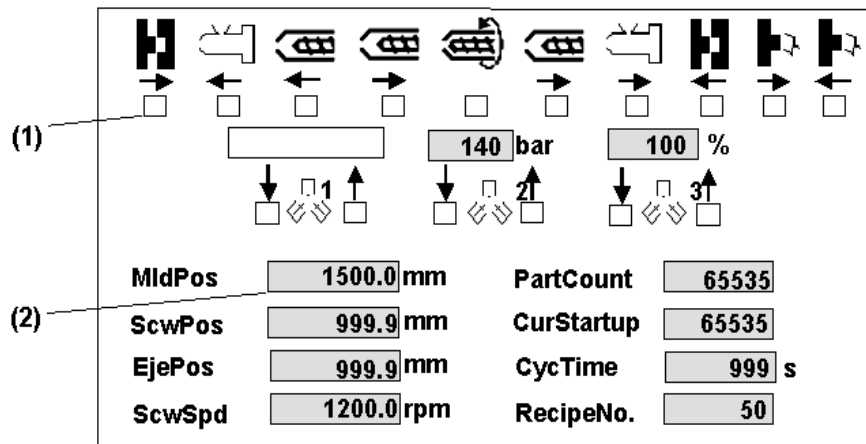
Element	Indicator	Meaning
(1) Current screen		Monitoring screen: Main screen. Display the working status of injection molding machine. The purge and lubrication can be controlled.
		Information screen: Display the system information, OEM picture and the status of input/outputs.
		Alarm screen: Display 32 alarms and events.
		Temperature screen: Display the set value and actual value of 5 + 1 temperature channels.
		Timing screen: Display every set value and actual value of timing.

Element	Indicator	Meaning
		Counter screen: Display the set value of part count, and the actual production quantity of this power on.
		Function screen: Select language, adjust the contrast and set the back light function.
		Load/save screen: Load/ save mold number and parameters to/from CI or MMC card.
		Data screen: Display the position and time during the latest 10 injections and cycles.
		Service screen: The basic settings for the machine, such as linear scale, proportional valve, password, etc.
		Mold open/close screen: Set the process parameters for 3 stages mold open / 4 stages mold close.
		Ejector setting screen: Set the process parameters for 3 ejector advance/retract modes, and ejector mode.
		Carriage setting screen: Set the process parameters for carriage advance/retract, and charging mode.
		Injection setting screen: Set the process parameters for 4 injection modes/ 3 pressure holding modes, and switch mode.
		Charging setting screen: Set the process parameters for 4 charging modes, and back pressure selection.
		Core 1 setting screen: Set process parameters for core 1, and select core 3.
		Core 2 setting screen: Set process parameters for core 2, and select core 3.
		Air blow setting screen: Set parameters for air blow 1 / 2 .
		Mold adjustment screen: Select manual mode or auto mode, and set process parameters.

Element	Indicator	Meaning
(2) Current status		Manual mode status: Users can carry out every action manually under this mode.
		Semi-auto mode status: The machine can complete one process cycle under this mode. Use Run key or safety door open/close to start.
		Timer full-auto mode status: Users can set cycle time on timing screen, and set actual cycle time on monitoring screen. Press Run key, and the machine runs automatically. The machine will stop when the set cycle time has been reached.
		Photo-sensor full-auto mode status: Users can set product counting on counter screen, and set actual product total quantity and product of this power-on on monitoring screen. Press Run key, and the machine runs automatically. The machine will stop when the set product counter is full.
		Mold adjustment status: This indicator is flashing under mold adjustment status. There are two modes: auto adjustment mode and pulse mode.
(3)		Cooling time status: This indicator is flashing during cooling. When cooling time is over, it will stop flashing.
(4)		Lubrication status: This indicator is flashing during lubrication. When lubrication is over, it will stop flashing.
(5)		Heating status: This indicator is flashing when heating is over. It will stop flashing after Heater key is pressed.
(6)		Motor status: This indicator is flashing when motor is power off. It will stop flashing after motor starts.
(7)		Safety door status: When safety door is open, this indicator is flashing. It will stop flashing after the door is closed.
(8)		Injection status: Screw is forbidden to be started if barrel temperature has not reached the set value, and this indicator is flashing. When the temperature reaches the set value, it will stop flashing.

Element	Indicator	Meaning
(9)		Event message: When this indicator is flashing, it means certain events happened. Check the event screen and take correction activities. Once the event is eliminated, it will stop flashing.
(10)		Alarm message: When this indicator is flashing, it means certain alarm happened. Check the alarm screen and take correction activities. Once the event is eliminated, it will stop flashing.

Displaying field:



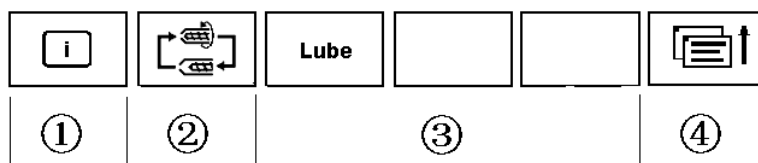
Soft key block:

Table 3-2 Description of soft key block

Element	Symbol	Meaning
(1)	Soft key F1	Used as event record information, OEM picture, and function selection.
(2)	Soft key F2	When there is a second screen, this key is normally used as page down. Also it could be used for other functions, e.g. purge key.
(3)	Soft keys F3~F5	Soft keys with assigned functions.
(4)	Soft key F6	Always as return key, the key to go back previous screen

3.1.1 Information Screen

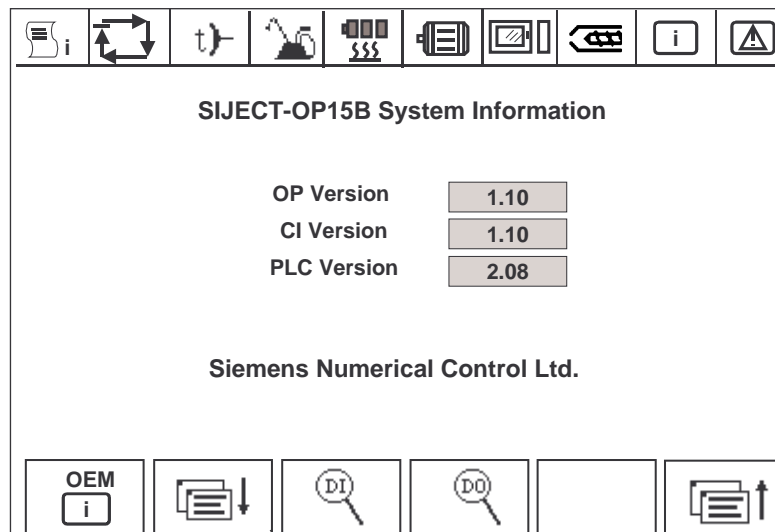


Fig. 3-4 Information screen 1



Fig. 3-5 Information screen 1.1 --- OEM picture

X203:		X204:		X205:		X206:	
DI 0.0	<input checked="" type="checkbox"/>	DI 1.0	<input checked="" type="checkbox"/>	DI 2.0	<input checked="" type="checkbox"/>	DI 3.0	<input checked="" type="checkbox"/>
DI 0.1	<input type="checkbox"/>	DI 1.1	<input type="checkbox"/>	DI 2.1	<input type="checkbox"/>	DI 3.1	<input type="checkbox"/>
DI 0.2	<input checked="" type="checkbox"/>	DI 1.2	<input checked="" type="checkbox"/>	DI 2.2	<input checked="" type="checkbox"/>	DI 3.2	<input checked="" type="checkbox"/>
DI 0.3	<input type="checkbox"/>	DI 1.3	<input type="checkbox"/>	DI 2.3	<input type="checkbox"/>	DI 3.3	<input type="checkbox"/>
DI 0.4	<input checked="" type="checkbox"/>	DI 1.4	<input checked="" type="checkbox"/>	DI 2.4	<input checked="" type="checkbox"/>	DI 3.4	<input checked="" type="checkbox"/>
DI 0.5	<input type="checkbox"/>	DI 1.5	<input type="checkbox"/>	DI 2.5	<input type="checkbox"/>	DI 3.5	<input type="checkbox"/>
DI 0.6	<input checked="" type="checkbox"/>	DI 1.6	<input checked="" type="checkbox"/>	DI 2.6	<input checked="" type="checkbox"/>	DI 3.6	<input checked="" type="checkbox"/>
DI 0.7	<input type="checkbox"/>	DI 1.7	<input type="checkbox"/>	DI 2.7	<input type="checkbox"/>	DI 3.7	<input type="checkbox"/>

Fig. 3-6 Information screen 1.2 --- Digital inputs

X300:		X301:		X302:		X303:		X304:	
DQ0.0	<input checked="" type="checkbox"/>	DQ1.0	<input checked="" type="checkbox"/>	DQ2.0	<input checked="" type="checkbox"/>	DQ3.0	<input checked="" type="checkbox"/>	DQ4.0	<input checked="" type="checkbox"/>
DQ0.1	<input type="checkbox"/>	DQ1.1	<input type="checkbox"/>	DQ2.1	<input type="checkbox"/>	DQ3.1	<input type="checkbox"/>	DQ4.1	<input type="checkbox"/>
DQ0.2	<input checked="" type="checkbox"/>	DQ1.2	<input checked="" type="checkbox"/>	DQ2.2	<input checked="" type="checkbox"/>	DQ3.2	<input checked="" type="checkbox"/>	DQ4.2	<input checked="" type="checkbox"/>
DQ0.3	<input type="checkbox"/>	DQ1.3	<input type="checkbox"/>	DQ2.3	<input type="checkbox"/>	DQ3.3	<input type="checkbox"/>	DQ4.3	<input type="checkbox"/>
DQ0.4	<input checked="" type="checkbox"/>	DQ1.4	<input checked="" type="checkbox"/>	DQ2.4	<input checked="" type="checkbox"/>	DQ3.4	<input checked="" type="checkbox"/>	DQ4.4	<input checked="" type="checkbox"/>
DQ0.5	<input type="checkbox"/>	DQ1.5	<input type="checkbox"/>	DQ2.5	<input type="checkbox"/>	DQ3.5	<input type="checkbox"/>	DQ4.5	<input type="checkbox"/>
DQ0.6	<input checked="" type="checkbox"/>	DQ1.6	<input checked="" type="checkbox"/>	DQ2.6	<input checked="" type="checkbox"/>	DQ3.6	<input checked="" type="checkbox"/>	DQ4.6	<input checked="" type="checkbox"/>
DQ0.7	<input type="checkbox"/>	DQ1.7	<input type="checkbox"/>	DQ2.7	<input type="checkbox"/>	DQ3.7	<input type="checkbox"/>	DQ4.7	<input type="checkbox"/>
		<input type="checkbox"/>		Force output		3.7			

Fig. 3-7 Information screen 1.3 --- Digital outputs

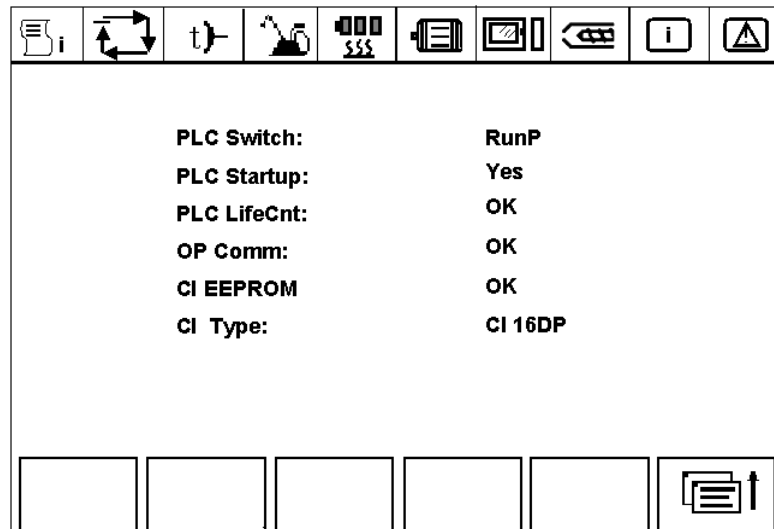


Fig. 3-8 Information screen 2

Operating sequences



Press Information key to enter the Information screen 1 and current system information will display, i.e., OP version, CI version and PLC version. See Fig 3-4, Information screen 1.



Press soft key F1 and OEM customer specific picture will display. See Fig 3-5, Information screen 1.1 --- OEM picture. Siemens can realize specific requirements if customers have any, such as displaying company name, address, symbol, etc.



Press soft key F3 to display the status of all 32 digital inputs. The box will backlight if there is a signal. See Fig. 3-6, Information screen 1.2 -- - digital inputs. Users can check the status of each input/output.



Press soft key F4 to display the status of all 40 digital outputs. The box will backlight if there is a signal. See Fig. 3-7, Information screen 1.3 -- - digital outputs.

Force Output is to make certain point force output. For example, input 3.4 and press softkey F2 "Force Output". Now DQ3.4 on the screen will backlight, and this point in the system will give output and LED on.



Press softkey F2 to enter the next screen. See Fig 3-8, Information screen 2. The type of CI and the position of PLC switches are displayed here. When PLC powers on, the system will check the running status of PLC automatically, such as PLC startup, PLC cycle, OP communication and CI EEPROM.

3.1.2 Monitoring screen

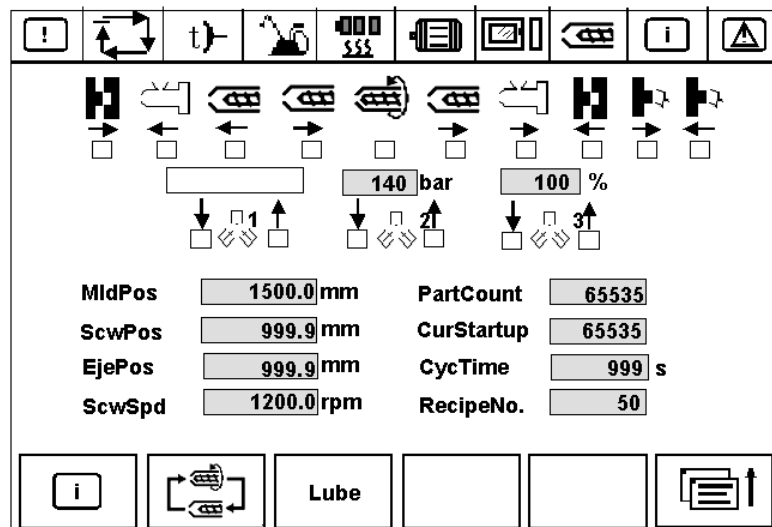


Fig 3-9 Monitoring screen 1

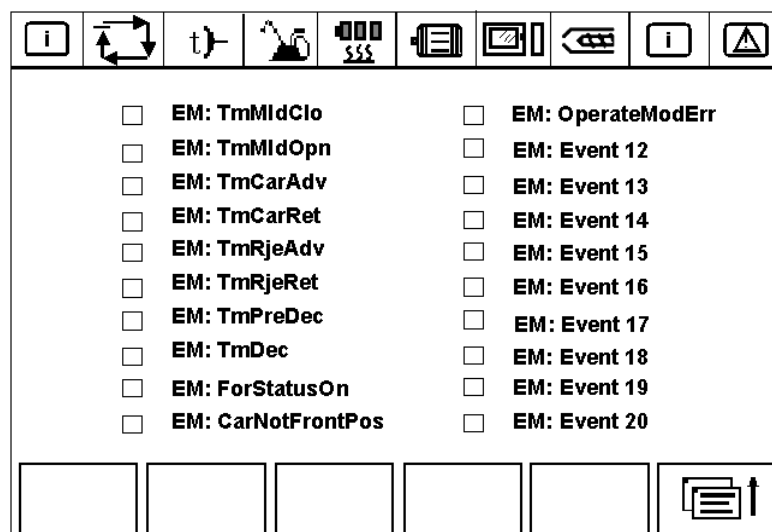


Fig 3-10 Monitoring screen 1.1– event record

Purge Time		T:s	t:s						
		99.9	99.9						
Purge Cnt		Cnt	cnt						
		99	99						
Start Purge		Stop Purge							

Fig 3-11 Monitoring screen 1.2 – purge screen

Operating sequences



Press Monitoring key to enter Monitoring screen where current system pressure and flow of the machine can be monitored. The real time status of the machine is also displayed, such as mold open/close, injection and core in/out, etc. see Fig. 3-9, Monitoring screen 1.

On this screen, following parameters can be monitored: Positions (mold position, screw position and ejector position), speed (screw rotation speed), quantity (part count, today's production), time (cycle time) and mold number (recipe number).

Press soft key F1 to display event record screen. See Fig. 3-10, Monitoring screen 1.1 --- event record screen. If there is event message during operation, then indicator ⑨ (see table 3-1) is flashing. Users should check this screen and take correction activities. It is different from alarms.

Press soft key F2 on monitoring screen 1 to enter the purge screen, and the purge time or purge counting can be set. Then press softkey F1 "Start purge" to start the purge operation. Or, press F2 "Stop purge" to stop the purge operation. See Fig. 3-11, Monitoring screen 1.2 --- purge screen.

Press soft key F3 "Manual lubrication" to carry out lubrication manually. During lubrication, the indicator ④ (see table 3-1) is flashing to inform users that the machine is now under lubrication.

Notice

During manual lubrication, related parameters should be preset on service screen. See section 3.1.10 "Service screen – Lubrication setting".

3.1.3 Alarm screen

<input type="checkbox"/> AdjLimit	<input type="checkbox"/> CycSenCov	<input type="checkbox"/> LubeErr							
<input type="checkbox"/> AutAdjFin	<input type="checkbox"/> CycSenErr	<input type="checkbox"/> Alarm 20							
<input type="checkbox"/> AdjSenErr	<input type="checkbox"/> MldOpnErr	<input type="checkbox"/> RobErr							
<input type="checkbox"/> TmpLimit	<input type="checkbox"/> TmMldLck	<input type="checkbox"/> TcInj							
<input type="checkbox"/> OilTmp	<input type="checkbox"/> EjeNotBck	<input type="checkbox"/> ScwSenErr							
<input type="checkbox"/> MotLoad	<input type="checkbox"/> CorNotBck	<input type="checkbox"/> LS PS Err							
<input type="checkbox"/> MldSg	<input type="checkbox"/> TmCha	<input type="checkbox"/> TC1 Fault							
<input type="checkbox"/> PartCount	<input type="checkbox"/> TmMldPro	<input type="checkbox"/> TC2 Fault							
<input type="checkbox"/> TmCyc	<input type="checkbox"/> InjSg	<input type="checkbox"/> TC3 Fault							

Fig 3-12 Alarm screen 1

<input type="checkbox"/> EM: TmMldClo	<input type="checkbox"/> EM: OperateModErr								
<input type="checkbox"/> EM: TmMldOpn	<input type="checkbox"/> EM: Event 12								
<input type="checkbox"/> EM: TmCarAdv	<input type="checkbox"/> EM: Event 13								
<input type="checkbox"/> EM: TmCarRet	<input type="checkbox"/> EM: Event 14								
<input type="checkbox"/> EM: TmRjeAdv	<input type="checkbox"/> EM: Event 15								
<input type="checkbox"/> EM: TmRjeRet	<input type="checkbox"/> EM: Event 16								
<input type="checkbox"/> EM: TmPreDec	<input type="checkbox"/> EM: Event 17								
<input type="checkbox"/> EM: TmDec	<input type="checkbox"/> EM: Event 18								
<input type="checkbox"/> EM: ForStatusOn	<input type="checkbox"/> EM: Event 19								
<input type="checkbox"/> EM: CarNotFrontPos	<input type="checkbox"/> EM: Event 20								

Fig 3-13 Alarm screen 1.1 – event record screen

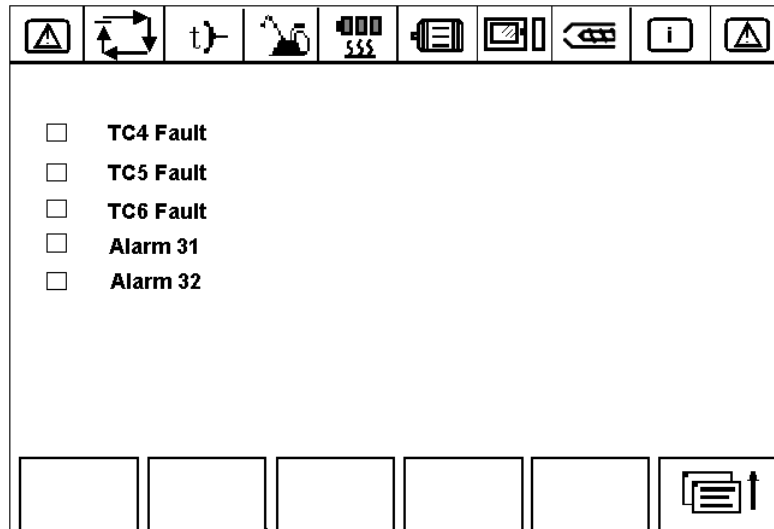





Fig 3-14 Alarm screen 2 - continued


Operating sequences



Press alarm key to enter the alarm screen, altogether 32 alarms are displayed here. See Fig 3-12 Alarm screen 1 and Fig 3-14 Alarm screen 2 – continued. When an alarm appears, the alarm indicator ⑩ (see Table 3-1) is flashing to inform the user to check the alarm screen.

On the alarm screen, the box in front of the current alarm is backlight. Then users should take corresponding correction activities to clear alarm resource, and press acknowledgment key  or manual mode key  to acknowledge and delete the alarms.

Press soft key F1  to enter the event record screen. See Fig 3-13, Alarm screen 1.1 – event record screen. This screen can also be called by pressing Information key.

Press soft key F2  to enter the next layer of screen. See Fig 3-14 Alarm screen 2 – continued. Other alarms can be checked.

Alarm 1	2002	--	5	--	16	14	:	26	:	10
Alarm 2	2002	--	5	--	16	14	:	26	:	10
Alarm 3	2002	--	5	--	16	14	:	26	:	10
Alarm 4	2002	--	5	--	16	14	:	26	:	10
Alarm 5	2002	--	5	--	16	14	:	26	:	10
Alarm 6	2002	--	5	--	16	14	:	26	:	10
Alarm 7	2002	--	5	--	16	14	:	26	:	10
Alarm 8	2002	--	5	--	16	14	:	26	:	10
Alarm 9	2002	--	5	--	16	14	:	26	:	10
Alarm 10	2002	--	5	--	16	14	:	26	:	10

Fig 3-15 Historical Alarm

Operating sequences



Press Alarm key to enter Alarm screen 1. On Alarm screen 1, press softkey

F3 to enter Historical Alarm screen. See Fig 3-15.

The names of alarm as well as their date and time are displayed on this screen.

3.1.4 Temperature screen

Sta	Act	Set	UpTol	LowTol	Noz	Fu Noz	Hold	Fu Hold	Heat Hold	Unit
■	200	200	20	10	40 %	<input type="checkbox"/>	120	<input type="checkbox"/>	Off	C
■	200	200								
■	200	200								
□	200	200								
□	200	200								
	50									

Fig 3-16 Temperature screen 1

Operating sequences



Press this key to enter the Temperature screen 1. See Fig 3-16, Temperature screen 1.

This screen consists of five temperature channels for barrel and one channel for oil temperature. Temperature values for each channel can be set on this screen. For the nozzle, either open loop or close loop can be selected.

If the nozzle is under open loop control, the indicator at “Open loop” will backlight. Users can set a percentage value in Nozzle block so as to make sure the percentage of heating on/off in a time base. For example, if time base is 20s, and nozzle is set as 30%. Then heating time is $20 \times 30\% = 6s$ and heating off time is 14s.

If the nozzle is under close loop control, the upper and lower tolerance can be set here which is valid for all temperature zone. When the temperature is within specification, channel heating will maintain the temperature within this range. The indicator ⑧ (see table 3-1) will stop flashing, which means the screw can work at this situation.

If Hold function is selected, the block of Holding will backlight. Holding temperature can be set for each temperature channel.

The unit of temperature will be °C.

Notice

Here, the thermocouple should only be type K.


Nozzle open loop control: no thermocouple is mounted on nozzle. Nozzle heating can be executed via heater on/off.

For the selection of open loop / close loop, please refer to section “3.1.10 Service screen --- temperature setting”.

Day	Time	Preheat
Monday	08 : 30	On ▾
Tuesday	08 : 00	On ▾
Wednesday	08 : 30	On ▾
Thursday	08 : 30	On ▾
Friday	08 : 30	On ▾
Saturday	08 : 30	Off ▾
Sunday	08 : 30	Off ▾

Fig 3-17 Temperature screen 1.1 --- Preheating setting

Preheating setting

Press softkey F3  to enter Preheating setting screen.

See Fig 3-17, Temperature Screen 1.1 --- Preheating setting. Preheating time can be set here.

Current Time --- display the current time of the system.

Time --- set the time to start preheating. Preheating time can be set for each day. The clock mode is 24 hours.

Preheat --- select or deselect preheating.


	YY	MM	DD
CurDate	2003	6	1
SetDate	2003	6	1

	HH	MM	SS
CurTime	8	30	30
SetDate	7	45	15

Con firm

Fig 3-18 Temperature screen 1.2 --- Date/time setting

Date/time setting

On Temperature screen 1, press softkey F4  to enter Date/time setting screen. See Fig 3-18. Date and time can be set accordingly.

Current Date --- display the system date by year-month-day.

Set Date --- input the actual date if the displayed current date is not correct.

Current Time --- display the system time by hour-minute-second.

Set Time --- input the actual time if the displayed current time is not correct.

Example

Set the actual date:

1. Press the Cursor keys and move the cursor to year field of **SetDate** and input actual year (such as 2003) by number keys. Confirm the entry by Enter key.
2. If you have confirmed the year entry, the cursor will move to month field automatically. Then, input actual month by number keys. Confirm your entry by Enter key.
3. Input the actual date by number keys. Confirm it by Enter key.
4. When all year, month and day have been set, press softkey F1 "**Confirm**" to enable the set. And the current date will be changed to the set date accordingly.

3.1.5 Timer screen

	T:s	t:s		T:s	t:s
TmCyc	999	999	TmMldClo	99.9	99.9
Interval	99.9	99.9	TmMldOpn	99.9	99.9
TcCool	999	999	TmCarAdv	99.9	99.9
TdCha	99.9	99.9	TmCarRet	99.9	99.9
TdInj	99.9	99.9	TmEjeAdv	99.9	99.9
TdCorIn	99.9	99.9	TmEjeRet	99.9	99.9
TdCorOut	99.9	99.9	TmPreDec	99.9	99.9
TdEjeAdv	99.9	99.9	TmDec	99.9	99.9
TdEjeRet	99.9	99.9	TmCha	999	999

Fig 3-19 Timer screen

Operating sequences



Press this key to enter the Timer screen. See Fig 3-19 Timer screen.

On this screen, the working time for every action and the delay time for action switch, as well as protection time for charging can be set.

Cycle time (TmCyc) — It is the time to monitor one machine cycle. If the actual machine cycle time is longer than the set value, then there is alarm.

Interval time (Interval) — When one cycle is finished, there is an interval time before the next machine cycle start. This setting is only applicable in time auto mode.

Cooling time (TcCool) — When injection is finished, the timer begins to work. This interval is to make sure that the material has enough time for cooling.

Charging delay (TdCha) — It is the interval time between injection and charging, which is to prevent the overheating of plastic material.

Injection delay (TdInj) — When the carriage arrives at the injection position, it will wait certain time before injection.

Core in delay (TdCorIn) — When previous work is finished, core in will begin after a delay time.

Core out delay (TdCorOut) — When previous work is finished, core out will begin after a delay time.

Ejector advance delay (TdEjeAdv) — When mold open is ended, ejector advance will begin after a delay time.

Ejector retract delay (TdEjeRet) — When ejector advance is finished, ejector retract will begin after a delay time.

Mold close time (TmMldClo) — The total time for mold close, which is monitoring time. There is event message if the setting time is exceeded.

Mold open time (TmMldOpn) — The total time for mold open, which is monitoring time. There is alarm if the setting time is exceeded.

Carriage advance time (TmCarAdv) — The total time for carriage advance, which is monitoring time. There is alarm if the setting time is exceeded.

Carriage retract time (TmCarRet) — The total time for carriage retract, which is monitoring time. There is alarm if the setting time is exceeded.

Ejector advance time (TmEjeAdv) — The total time for ejector advance, which is monitoring time. There is alarm if the setting time is exceeded.

Ejector retract time (TmEjeRet) The total time for ejector retract, which is monitoring time. There is alarm if the setting time is exceeded.

Pre-decompression time (TmPreDec) — The total time for pre-decompression, which is monitoring time. There is alarm if the setting time is exceeded.

Decompression time (TmDec) — The total time for decompression, which is monitoring time. There is alarm if the setting time is exceeded.

Charging time (TmCha) — The total time for charging, which is monitoring time. There is alarm if the setting time is exceeded.

3.1.6 Counter screen

The Counter screen displays the following information:

	Cnt	Cnt
Part Count	65536	65536
Part Nr/Mld	99	
Shot Count		65536
Parts from Startup		65536

At the bottom, there are two buttons: "Clear Shot" and "Clear Part".

Fig 3-20 Counter screen

Operating sequences



Press this key to enter the counter screen. See Fig 3-20 Counter screen.

Part count and part numbers for each mold can be set on this screen.

Part counter (Part Count) — Set the production quantity.

Part numbers for each mold (Part Nr/Mld) — Set the production quantity for each mold.

Shots counter (Shot Count) — Display the number of shots.

Parts of this power on (Parts from Startup) — Display the production quantity of current power on.

Softkey F1 — Clear shot. Press this key, and the injection time will be reset.

Softkey F2 — Clear part. Press this key, and the part count will be reset.

3.1.7 Function screen

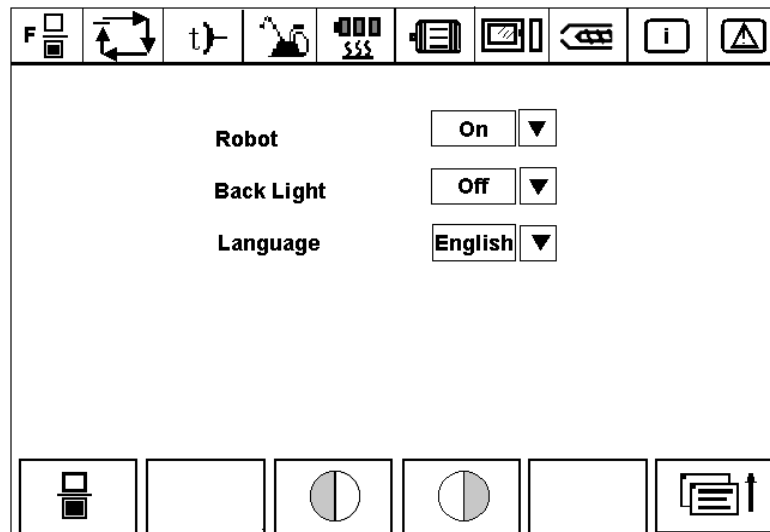


Fig 3-21 Function screen

Operating sequences



Press this key to enter the function screen, see Fig 3-21, Function screen.

On this screen, users can set the robot operation, back light function, and language (English/Chinese).






Robot — select or deselect robot.


Back light (Back Light) — select or deselect back light function. If selected, then back light will be turned off automatically if there is no key pressed during 3 minutes; otherwise back light will be turned off if there is no key pressed during 10 minutes.

Language — Select English or Chinese.

Examples

For robot selection, you can do as follows:

1. Press key  or  to enter the robot setting field;
2. Press  key (for the first time, it is required to input password 1 of "1111", then confirm the entry by "Enter" key);
3. Cursor is at selection field, press  or  to select;
4. Press "Enter" key to confirm the selection.

Contrast adjustment Press softkey F3  key and the system displays the message "**Type password**". Input the password and press "Enter" key to confirm the entry.

Then, press softkey F3  again, and the screen contrast is increasing. On the contrary, press F4 , the screen will become darker.

3.1.8 Save/load screen

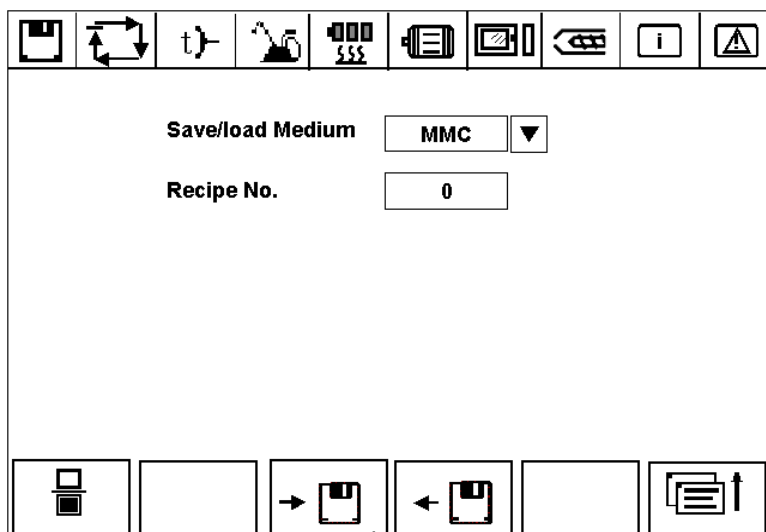


Fig 3-22 Save/load screen

Operating sequences



Press this key to enter the Save/load screen. See Fig 3-22.






Here, users can select save/load medium and set the recipe number.

Save/load Medium — recipes can be saved/loaded to/from CI board or MMC card.



Recipe number (Recipe No) — MMC card can store 1~50 recipe data and CI board can save 1~30 recipe data. And, 1~50 recipe data can be loaded from MMC, and 1~30 recipe data can be loaded from CI.

Example

For MMC selection, you can do as follows:

1. Press  or  key to move the cursor to the save/load medium field;
2. Press selection key  (for the first time, it is required to input password 1 of "1111", then confirm the entry by "Enter" key);
3. Press  or  key to select the MMC card;
4. Press "Enter" key to confirm the selection;

When saving the current recipe parameter to the MMC card, you can do as follows:

1. Select recipe number in Recipe No., such as 6;
2. Select MMC card in Save/load medium, and confirm it with "Enter" key;
3. Press soft key F3  to do the saving. The system will display a message when saving operation is finished.
4. Press  to acknowledge it.

3.1.9 Data screen

DATA								
Shot	MldOpn	InjStr	InjEnd	HldEnd	ChaEnd			

Fig 3-23 Data screen 1

DATA								
Shot	MldOpn	InjStr	InjEnd	HldEnd	ChaEnd			

Fig 3-24 Data screen 2

Operating sequences

DATA

Press this key to enter the Data screen 1, and press page down key F2 on this screen to enter the Data screen 2. See Fig 3-23 Data screen 1 and Fig 3-24 Data screen 2.

Data screen provides the important data of the latest 10 shots, the latest one is always on the top.

Shot — Shot number. The latest shot is always on the top.

Mold open end (MldOpn) — End position of mold open, in mm.

Start injecting (InjStr) — Start position of injection, in mm.

Injection end (InjEnd) — End position of injection, in mm.

Holding end (HldEnd) — End position of pressure holding, in mm.

Charging end (ChaEnd) — End position of charging, in mm.

Ejector advance end (EjeEnd) — End position of ejector advance, in mm.

Mold protection time (MProTm) — Time of low-pressure mold protection, in second.

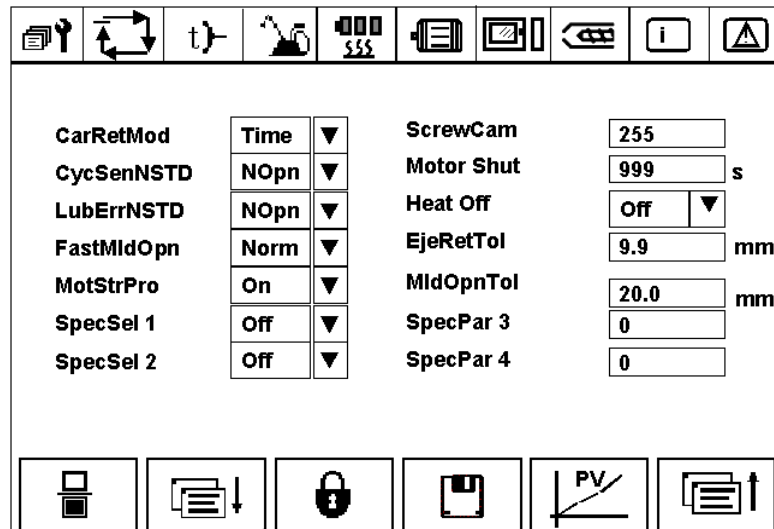
Mold lock time (MLckTm) — Time of high-pressure mold lock operation, in second.

Injection time (InjTm) — Total time of 4 stages injection, in second.

Cycle time (CycTm) — Time record of every machine cycle, in second.

Charging time (ChaTm) — Time record of every charging operation, in second.

3.1.10 Service screen



Service screen 1			
CarRetMod	Time	▼	
CycSenNSTD	NOpn	▼	
LubErrNSTD	NOpn	▼	
FastMldOpn	Norm	▼	
MotStrPro	On	▼	
SpecSel 1	Off	▼	
SpecSel 2	Off	▼	
ScrewCam	255		
Motor Shut	999	s	
Heat Off	Off	▼	
EjeRetTol	9.9	mm	
MldOpnTol	20.0	mm	
SpecPar 3	0		
SpecPar 4	0		

Fig 3-25 Service screen 1

Operating sequences



Press this key to enter Service screen. See Fig 3-25 Service screen 1.

On service screen, input password 2 (2000) before any parameter setting. Then, confirm your entry by “Enter” key.

Parameter setting

See Fig. 3-25 Service screen 1 --- parameter setting.

Carriage retract mode (CarRetMod) — Carriage retract can be set as **position mode** or **time mode**.

Photo sensor mode (CycSenNSTD) — Photo sensor can be set as **normally open mode** or **normally close mode**.

Lubrication error (LubErrNSTD) — Contactor in alarm circuit can be set as **normally open mode** or **normally close mode**.

Fast mold open (FastMldOpn) — It can be set as **normal mode** or **special mode**.

Motor protection (MotStrPro) — Motor protection can be selected, i.e., if there is delay time during motor star triangle startup. Motor protection can also be deselected.

Special function 1 (SpecSel 1) — Spare.

Special function 2 (SpecSel 2) — Spare.

Number of screw cams (ScrewCam) — The cam numbers set on the screw during screw speed measurement. Range: 1~255.

Motor shut-down when alarm occurs (Motor Shut) — When there is alarm, the time passing by from alarm occurring to motor shut. Range: 30~999s.

Heat off when alarm occurs (Heat Off) — Select **Heat On** or **Heat Off** when there is alarm.

Tolerance when ejector retract (EjeRetTol) — When using linear scale, users can set the tolerance of ejector retract. Range: 0.1~9.9 mm.






Tolerance when mold open (MldOpnTol) — Set the tolerance of mold open. Range: 1.0~99.9 mm.

Special parameter 3 (SpecPar 3) — Spare.

Special parameter 4 (SpecPar 4) — Spare.

Example


Select Position at Carriage retract mode (CarRetMod):

1. Press  or  key to move the cursor to carriage retract mode field;
2. Press  key to start the setting mode;
3. Press  or  key to select "Position" mode;
4. Confirm the setting with "Enter" key;

	Switch	Current	Ref	Actual	Length
LS Mold	<input type="checkbox"/>	1999.9	999.9	1999.9	2000
LS Inject		1999.9	999.9	1999.9	2000
LS Eject	<input type="checkbox"/>	999.9	999.9	999.9	2000
LS Eject	Off ▼	Ref Mld: End of MldClo Ref Inj: End of Inj Ref Eje: End of EjeRet			

Fig 3-26 Service screen 2 – linear scale setting

Linear scale setting

Press soft key F2  to enter the next service screen, see Fig. 3-26 Service screen 2 --- linear scale setting.

Linear Scale mold:

Switch --- Proximity switch signal. When mold close is at position, the box will backlight, showing the reference point of linear scale.

Reference point --- setting value. Mold lock end should be the reference of linear scale.

Length --- setting value. The length of linear scale can be set here, ranged from 1~6553mm.

Actual value --- displayed value. Display the actual value of linear scale.

Current value --- displayed value. It is the difference from actual value to reference point.

Linear scale injection:

Reference point --- setting value. Reference point of linear scale can be set here.

Length --- setting value. The length of linear scale can be set here, ranged from 1~6553mm.

Actual value --- displayed value. Display the actual value of linear scale.

Current value --- displayed value. It is the difference from actual value to reference point.

Linear scale ejector:

Switch --- Proximity switch signal. When ejector retract is at position, the box will backlight, showing the reference point of linear scale.

Reference point --- setting value. Ejector retract end should be the reference of linear scale.

Length --- setting value. The length of linear scale can be set here, ranged from 1~6553mm.


Actual value --- displayed value. Display the actual value of linear scale.

Current value --- displayed value. It is the difference from actual value to reference point.

Linear scale ejector --- Linear scale ejector can be selected or deselected here.

Fig 3-27 Service screen 1.1 – password setting

Password setting


Press soft key F3  to enter the password setting screen. See Fig 3-27 Service screen 1.1 --- password setting, and password can be set or changed here.

Up:

Higher password --- the highest level. The default value of this system is xxxx (Please ask manufacturer), then confirm by Enter Key.

New Password 2 --- A new password 2 can be set here, then confirm by Enter Key. The default value of this system is 2000.

Retype Password 2 --- retype the new password 2, and confirm it with Enter Key.


When the password has been successfully changed, the screen will display a message. Press Acknowledgment Key  to finish the operation.

Low:

Higher password --- it is the password level 2. The default value of this system is 2000, then confirm it by Enter Key.

New password 1 --- a new password 1 can be set here, then confirm by Enter Key. The default value of this system is 1111.

Retype password 1 --- retype the new set password 1, then confirm it by Enter Key.

When the password has been successfully changed, the screen will display a message. Press Acknowledgment Key  to finish the operation.

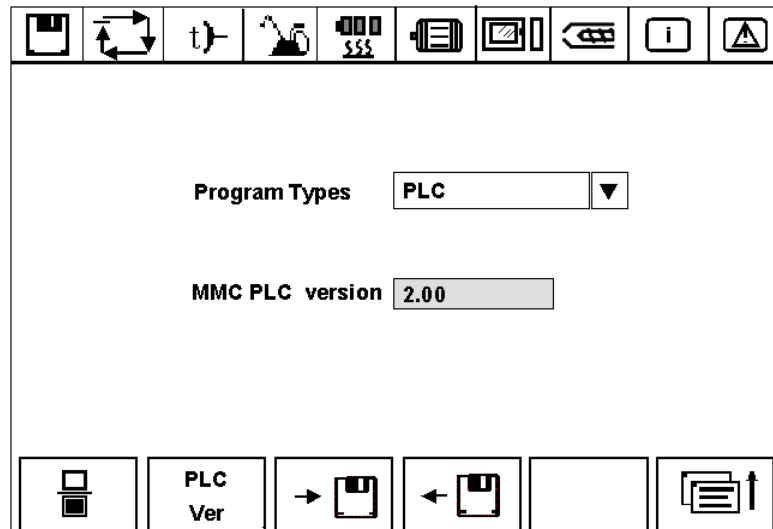







Fig 3-28 Service screen 1.2 --- Save/load screen

Operating sequences Press softkey F4  to enter save/load screen. The PLC/menus/CSP can be saved/loaded to/from MMC.


Program types --- User can select PLC, menus or CSP.

MMC PLC version --- displayed value. Press softkey F2 “PLC version” to show the PLC version in MMC.

Operating examples To select Menus in Program types. Steps are as follows:

1. Press cursor key  or  to enter program type selection;
2. Press Selection Key , and the cursor moves to the left;
3. Press cursor key  or  to select “Menus”;
4. Press Enter Key to confirm.

Download Menus from MMC. Steps are as follows:


1. Plug in MMC card in the CI (this operation should be done after turning off the power);
2. Select “Menus” in Program Type;
3. Press softkey F4  to start data transfer;
4. Restart the system after the transfer process is finished. The operation is over.

AdjustVal	Off ▼
Val Type	Flow ▼
ValLimit	Min ▼
PressTest	140 bar
FlowTest	100 %
BckPreTest	140 bar

□

Force Output + - [List Icon]

Fig 3-29 Service screen 1.3 – Proportional valve adjustment

Operating sequences Press softkey F5  to enter proportional valve adjustment screen. See Fig.3-29 Service Screen 1.3 --- proportional valve adjustment. Proportional valve can be adjusted here, and you can test pressure, flow and back-pressure in force output mode.

Adjust Valve --- select On/Off to start valve adjustment.

Valve Type --- select the type of valve: flow / pressure / back-pressure / reserved.

Valve Limit --- select min. / max. value.






Pressure Test --- in force output mode, input pressure value, ranged from 0~140bar.

Flow Test --- in force output mode, input flow value, ranged from 0~100%.

BackPressure Test --- in force output mode, input pressure value, ranged from 0~140bar.






Operating sequences Firstly, start valve adjustment:

Select “ON” in Adjust Valve mode:

1. Use cursor key  or  to enter valve adjustment selection;
2. Press selection key , and the cursor moves to left;
3. Use cursor key  or  to select “ON”;
4. Press Enter key to confirm.

Secondly, select valve type, such as pressure valve; then select valve limit, such as maximum:

Choose "Max." in valve limit, and change its value by softkey:

1. Use cursor key  or  to enter valve adjustment selection;
2. Press selection key , and cursor moves to left;
3. Use cursor key  or  to select "Max.";
4. Confirm it with Enter Key;
5. Press softkey F3 "+" to increase the "Max."; or use softkey F4 "-" to reduce "Max.". This process can be observed by external amperemeter.

After finishing the adjustment of the valves. Select OFF to stop valve adjustment.

Lastly, check the adjustment result:

In the "Force Output" mode, implement the "Pressure Test":

1. Press softkey F2 "Force Output", and the upper box will backlight;
2. Set the value of 140bar in Pressure Test;
3. Check if the external amperemeter reaches the maximum, such as 1Amp.

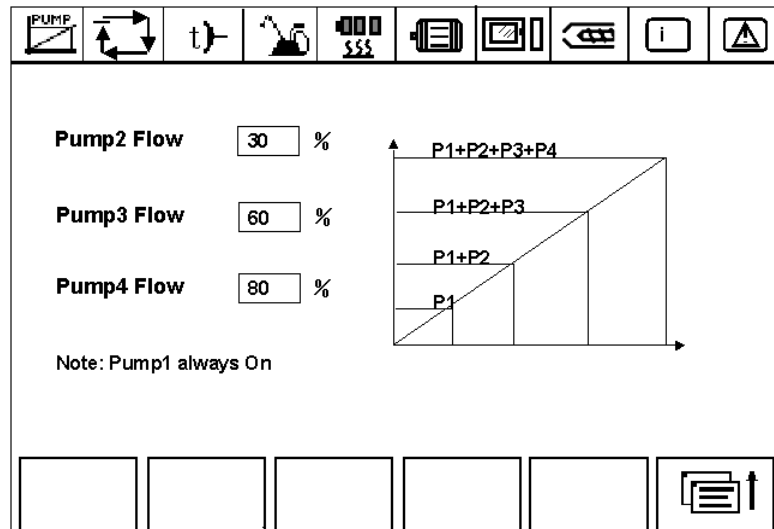




Fig 3-30 Service screen 2.1 – pumps setting

Pumps setting

On service screen 1, press softkey F2  to enter service screen 2 --- linear scale setting. Then, press softkey F2  to enter pump combination setting screen. See Fig. 3-30 Service Screen 2.1 --- pump combination setting. Pump2/pump3/pump4 can be selected here and the flow can be set accordingly.

Pump2 Flow --- flow range 0~100%.



Pump3 Flow --- flow range 0~100%.

Pump4 Flow --- flow range 0~100%.

Lub Time	999 s	999 s
Lub Count	32767	32767
Lub Status	<input type="checkbox"/>	
LubOilLevel	<input type="checkbox"/>	


Buttons at the bottom: Lube, [Empty], [Empty], [Empty], [Empty], [List Icon]


Fig 3-31 Service screen 2.2 – lubrication picture

Operating sequences On service screen 1, press softkey F2  to enter service screen 2 --- linear scale setting. Then press softkey F3  to enter lubrication setting screen. See Fig. 3-31 Service Screen 2.2 --- lubrication picture. Lubrication time and lubrication count can be set here.

Lubrication Time --- every lubrication time can be set here, ranged from 0.0~99.9sec.

Lubrication Count --- set the numbers of injection cycles. When the cycles have been finished, the system will be lubricated automatically. The range is from 1 to 32767.

Lubrication Status --- Press softkey F1 “manual lubrication” to start the lubrication, then the box will backlight, and  is flashing.

Lubrication Oil Level --- Inform the user to add lubrication oil when the oil level is very low, then the box will backlight and alarm occurs, i.e.,  is flashing.

TmpTolPlus	3	° C	Channel 1	Off	▼				
TmpTolMinus	5	° C	Channel 2	Off	▼				
Oil Upper	99	° C	Channel 3	Off	▼				
Oil Lower	30	° C	Channel 4	Off	▼				
TmpCompen	399.9	° C	Channel 5	Off	▼				
Nozzle Mode	CloLoop	▼	Oil TmpAlm	Off	▼				

Fig 3-32 Service screen 2.3 – temperature setting

Temperature setting On service screen 1, press softkey F2 to enter service screen 2 --- linear scale setting. Then, press softkey F4 so as to enter temperature setting screen. Temperature channel can be set from 1 to 5, and temperature can be set accordingly.

Temperature Tolerance Plus --- set the tolerance plus for each temperature channel.

Temperature Tolerance Minus --- set the tolerance minus for each temperature channel.

Oil Upper --- set the upper limit of hydraulic oil temperature.

Oil Lower --- set the lower limit of hydraulic oil temperature.

Temperature Compensation --- set the temperature compensation. The system has been set the compensation before delivery, and it is unnecessary for users to set it again.

Nozzle Mode --- two modes are available, it can be assigned as close-loop or open-loop.

Channel 1 --- select or deselect

Channel 2 --- select or deselect

Channel 3 --- select or deselect


Channel 4 --- select or deselect


Channel 5 --- select or deselect

Oil Temperature Alarm --- If oil temperature alarm is selected: when the upper/lower limit of oil temperature has been set, there is no alarm if oil temperature is within the specification and alarm occurs if it is out of specification.

	bar	%		bar	%
Mld Clo	5	5	MldOpn	5	5
	5	5		5	5
	5	5		5	5
	5	5		5	5
Car	5	5	Ejector	5	5
	5	5		5	5
Inject	5	5	Dec	5	5
	5	5		5	5
Charge	5	5	Core 1	5	5
	5	5	Core 2	5	5
	5	5	Core 3	5	5

Fig. 3-33 Service screen 2.4 – Ramp setting

Operating Sequences On service screen 1, press softkey F2  to enter Service screen 2 ---

linear scale setting. Then, press softkey F5  to enter ramp setting screen. See Fig. 3-33 Service Screen 2.4 --- setting ramp data. The ramp data for every movement can be set accordingly.

Mold Close --- there are four ramps to be set: pressure and flow for each ramp, and ranged from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Carriage --- it refers to the ramps during carriage advance and carriage retract: set pressure and flow for each, and ranged from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Inject --- it refers to the ramps when injection starts and injection completes: set pressure and flow for each, and the range is from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Charge --- it refers to the ramps when charging starts and charging completes: set pressure and flow for each, and the range is from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Mold Open --- there are four ramps to be set: pressure and flow for each ramp, and ranged from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Ejector --- it is the ramp before and after the actions of ejector: setting pressure and flow for each, and the range is from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch.

Decompression --- it refers to the ramps when decompression begins and decompression completes: set pressure and flow for each, and the range is from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is action switch:

Core 1 --- it is the ramp for core 1 in/out: set pressure and flow for each, and the range is from 0 to 99. The values should be the differences for pressure and flow between every two PLC cycles when there is any action switch.

Core 2 / 3 --- the operating sequence is same as Core 1.

3.2 Manual operation screen

3.2.1 Mold open/close screen

	:mm	:bar	:%	T:s	T:s
MldClo 1	1500.0	140	99		
MldClo 2	1500.0	140	99		
MldPro	1500.0	140	99	99.9	99.9
MldLck	<input type="checkbox"/>	140	99	99.9	99.9
DifValve	On ▼				
MldOpn 1	1500.0	140	99		
MldOpn 2	1500.0	140	99		
MldOpn 3	1500.0	140	99		
MldOpnTol	1500.0	MldPos	0.0		

Fig 3-34 Mold open/close screen

Operating sequences



Press Mold open/close key to enter the screen. See Fig 3-34.

Four status of mold close are displayed on the screen: slow, fast, protection with low pressure, lock mold with high pressure. Three status of mold open are displayed on the screen: high pressure, fast and slow.

The parameters, such as position, pressure, flow and time are set on this screen. Additionally, users can select mold close with differential valve; set tolerance of mold open; display the position of mold and display the actual working times.

Mold close slow (MldClo 1) — set position, pressure and flow

Mold close fast (MldClo 2) — set position, pressure and flow

Mold protection with low pressure (MldPro) — set position, pressure and flow. In addition, to protect mold from particles, users can set mold protection time here. If mold protection with low pressure cannot be finished within the set time, the mold will retract to the end position of mold open and send alarm.

Mold lock with high pressure (MldLck) — set the pressure and flow, as well as the time for mold lock. If mold lock signal is not detected within the set time, the machine will stop and send alarm. Here, the indicator will show the mold lock signal. If it is backlight, then mold lock is at position.

Mold close with differential valve (DifValve) — differential valve can be selected to add mold lock force. Users can also deselect it.



Mold open with high pressure (MldOpn 1) — set position, pressure and flow.

Fast mold open (MldOpn 2) — set the position, pressure and flow of fast mold open.

Slow mold open (MldOpn 3) — set the position, pressure and flow of slow mold open.

Mold open tolerance (MldOpnTol) — set the allowed tolerance of mold open end position. When mold is within this tolerance, then the system will consider the mold is opened to the end.

Mold position (MldPos) — display the actual position of the mold.

Press  key to close the mold manually, and press  key to open the mold manually.

3.2.2 Ejector screen

	:mm	:bar	:%	Cnt	cnt
EjeAdv 1	999.9	140	99	99	99
EjeAdv 2	999.9	140	99	Eje Count	
EjeRet 1	999.9	140	99		
EjeRet 2	999.9	140	99		
Vibrate	999.9				
EjeBck	<input type="checkbox"/>				
EjeMode	Mul ▼				
EjePos	999.9				

Fig 3-35 Ejector screen

Operating sequences



Press the middle key to enter the ejector screen. See Fig 3-35.

Four status of the ejector advance / retract are displayed on the screen: ejector advance 1, ejector advance 2, ejector retract 1 and ejector retract 2.

All related parameters can be set here, including position, pressure, flow and counter. When Vibrate is selected, then the vibration position can also be set.

Ejector advance 1 (EjeAdv 1) — During ejector advance, users can set position, pressure and flow for ejector advance 1.

Ejector advance 2 (EjeAdv 2) — During ejector advance, users can set position, pressure and flow for ejector advance 2.

Ejector retract 1(EjeRet 1) — During ejector retract, users can set position, pressure and flow for ejector retract 1.

Ejector retract 2(EjeRet 2) — During ejector retract, users can set position, pressure and flow for ejector retract 2.



Vibrating position (Vibrate) —Set position here. Ejector retracts to this position and then advances. This is so called vibration ejection.

Ejector backward indicator (EjeBck) —when ejector retracts to the end position, this indicator will backlight, indicating that the end position signal has been detected.

Ejector mode (EjeMode) — users can select once, multiple or vibration mode. Once mode: ejector advances after mold open, but it will not retract. Multiple mode: ejector advances and retracts to the end position, then advances again. It advances and retracts according to the set numbers. Vibration mode: ejector advances and retracts to the set position, then advances again. It advances and retracts according to the set numbers. If this item is deselected, that means this machine does not use ejector.

Ejector position (EjePos) — display the actual position of ejector

Ejection counter (Eje Count)— when ejector multiple / vibration mode is selected, users can set the numbers of ejection.

Press  key to forward ejector to remove part from mold manually,
and press  key to retract ejector manually.

3.2.3 Carriage Screen

	:bar	:%	T:s	T:s
CarAdv	140	99		
CarRet	140	99	99.9	99.9
Feed mode	Fixed ▼			
Fixed: Cha --- Dec				
Front: Cha --- Dec --- Car Bck				
Back: CarBck --- Cha --- Dec				

Fig 3-36 Carriage screen

Operating sequences



Press the middle key to enter the carriage screen. See Fig 3-36.

The status of carriage advance and retract is displayed here, also the mode of feeding.

Carriage advance (CarAdv) — set the pressure and flow of carriage advance.


Carriage retract (CarRet)— set the pressure, flow and time of carriage retract. The time set here is used for controlling carriage retract when timer is selected as carriage retract mode. When the time is expired, carriage retract will be finished.


Feeding mode (Feed mode) — there are three modes for feeding: fixed, front and back.

Fixed feeding: the carriage is fixed, first charging then decompression.

Front feeding: the carriage is at the front, first charging then decompression, then the carriage will retract.

Back feeding: the carriage will retract first, then charging and decompression.

Press  key to make carriage retract manually.

Press  key to make carriage advance manually.

3.2.4 Injection screen

	:mm	:bar	:%	T:s	T:s
Inject 1	1500.0	140	99		
Inject 2	1500.0	140	99		
Inject 3	1500.0	140	99	99.9	99.9
Inject 4	1500.0	140	99		
TraMode	Pos	▼			
Holding 1		140	99	99.9	99.9
Holding 2		140	99	99.9	99.9
Holding 3		140	99	99.9	99.9
ScwPos	1500.0				

Fig 3-37 Injection screen

Operating sequences



Press Injection key to enter the injection screen. See Fig 3-37.

The system offers four Injection stages and three Pressure holding stages, and the transition between injection and pressure holding can be selected. On this screen, corresponding parameters can be set, such as position, pressure, flow and time.

Injection 1 (Inject 1) — set the position, pressure and flow of injection 1.

Injection 2 (Inject 2) — set the position, pressure and flow of injection 2.

Injection 3 (Inject 3) — set the position, pressure and flow of injection 3.

Injection 4 (Inject 4) — set the position, pressure and flow of injection 4.

The time is set for the whole injection actions



Transfer mode (TraMode) — it refers to the transfer mode between injection and pressure holding. Three modes can be selected: Position mode, Time mode, and Position/Time mode.

Holding 1 — set the pressure, flow and time for pressure holding 1.

Holding 2 — set the pressure, flow and time for pressure holding 2.

Holding 3 — set the pressure, flow and time for pressure holding 3.

Screw position (ScwPos) — display the current position of screw.

Press Manual injection key  to do injection once manually, and press Decompression key  to suck back once.

Notice:

There are three transition modes between injection and pressure holding.

If Position mode is selected, then the set time is monitoring time. The alarm is warning when the time is exceeded.

If Time mode is selected, then the set time is control time. The set position value is invalid.

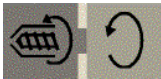
If Position/Time mode is selected, then the one who reaches the set value first takes the priority.

3.2.5 Charging screen

	:mm	:bar	:%	:bar
PreDec	1500.0	140	99	BckP
Charge 1	1500.0	140	99	140
Charge 2	1500.0	140	99	140
Charge 3	1500.0	140	99	140
Charge 4	1500.0	140	99	140
Dec	1500.0	140	99	
BP Select	Off ▼			
ScwPos	1500.0			
ScwRpm	999			

Fig 3-38 Charging screen

Operating sequences



Press the Charging key to enter the charging screen. See Fig 3-38.

Four charging statuses are provided on the screen, and related parameters can be set here, including position, pressure and flow. In addition, backpressure can be selected to set the pressure.

Pre-decompression — implement decompression before charging, and the position, pressure and flow can be set here.

Charging 1 — set the position, pressure and flow for charging 1. If proportional backpressure valve is used, then the value should be set as backpressure.

Charging 2 — set the position, pressure and flow for charging 2. If proportional backpressure valve is used, then the value should be set as backpressure.

Charging 3 — set the position, pressure and flow for charging 3. If proportional backpressure valve is used, then the value should be set as backpressure.


Charging 4 — set the position, pressure and flow for charging 4. If proportional backpressure valve is used, then the value should be set as backpressure.

Decompression (Dec) — implement decompression after charging, and the position, pressure and flow can be set here.

Back pressure selection (BP Select) — you can select the proportional backpressure valve or deselect it.

Screw position (ScwPos) — display the current position of screw.

Screw rotation speed (ScwRmp) — display the actual screw rotation speed.

In manual mode, press charging key  to begin charging. Release the key, and the charging will stop.

3.2.6 Core 1 screen

	:mm	:bar	:%	T:s	Cnt
Core 1 In	1500.0	140	99	99.9	999
Core 1 Out	1500.0	140	99	99.9	999
CoreSelect	On	▼		99.9	999
CorHId	Off	▼			
CorMode	Pos	▼			
CorInPos	MldCloStr	▼			
CorOutPos	MldOpnFin	▼			
MldPos	1500.0				

Fig 3-39 Core 1 in/out --- screen 1

Operating sequences



Press the Core 1 key to enter Core 1 screen. See Fig 3-39.

The screen displays the core 1 in/out status, and the related parameters can be set here, including the position, pressure, flow, time and counter. The core operation can be controlled by position, by time, or by counter.

Core 1 in — set the pressure and flow for core 1 in. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.

Core 1 out — set the pressure and flow for core 1 out. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.



Core 1 selection (CorSelect) — select or deselect core 1 in/out.

Core 1 mode (CorMode) — select position mode, time mode or counter mode.


Core in position (CorInPos) — set the position to do core in. The core in can be at the start of mold close, during mold close, or at the end of mold close.

Core out position (CorOutPos) — set the position to do core out. The core out can be at start of mold close, during mold close, or at the end of mold close.

Mold position (MldPos) — display the current position of mold.

Press Manual Core 1 in key  to do core in manually, and press Manual Core 1 out key  to do core out.

	:mm	:bar	:%	T:s	Cnt
Core 3 In	1500.0	140	99	99.9	999
				99.9	999
Core 3 Out	1500.0	140	99	99.9	999
CorSelect	On	▼		99.9	999
CorHld	Off	▼			
CorMode	Pos	▼			
CorInPos	MldCloStr	▼			
CorOutPos	MldOpnFin	▼			
MldPos	1500.0				



Core In

Core Out





Fig 3-40 Core 1 in/out --- screen 2

On Core 1 screen 1 (see Fig 3-39), press softkey F5  to enter Core 1 screen 2. See Fig 3-40. Core 3 in/out can be set here.

The screen displays the core 3 in/out status, and the related parameters can be set here, including the position, pressure, flow, time and counter. The core operation can be controlled by position, by time, or by counter.

Core 3 in — set the pressure and flow for core 3 in. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.

Core 3 out — set the pressure and flow for core 3 out. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.

Core 3 selection (CorSelect) — select or deselect core 3 in/out.

Core 3 mode (CorMode) — select position mode, time mode or counter mode.

Core in position (CorInPos) — set the position to do core in. The core in can be at the start of mold close, during mold close, or at the end of mold close.

Core out position (CorOutPos) — set the position to do core out. The core out can be at the start of mold close, during mold close, or at the end of mold close.

Mold position (MldPos) — display the current position of mold.

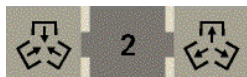
Press soft key F3 “Core in” to insert the core into mold, and press F4 “Core out” to do core out.

3.2.7 Core 2 screen

	:mm	:bar	:%	T:s	Cnt
Core 2 In	1500.0	140	99	99.9	999
Core 2 Out	1500.0	140	99	99.9	999
CorSelect	On	▼		99.9	999
CorHld	Off	▼			
CorMode	Pos	▼			
CorInPos	MldCloStr	▼			
CorOutPos	MdOpnFin	▼			
MldPos	1500.0				

Fig 3-41 Core 2 in/out --- screen 1

Operating sequences



Press the Core 2 key to enter Core 2 screen. See Fig 3-41.

The screen displays the core 2 in/out status, and the related parameters can be set here, including the position, pressure, flow, time and counter. The core operation can be controlled by position, by time, or by counter.

Core 2 in — set the pressure and flow for core 2 in. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.

Core 2 out — set the pressure and flow for core 2 out. If it is by position, then position value should be set. If it is by time, then the time should be set as a parameter and the actual time will be displayed. If it is by counter, then the counter should be set and the actual counting value will be displayed.


Core 2 selection (CorSelect) — select or deselect core 2 in/out.

Core 2 mode (CorMode) — select position mode, time mode or counter mode.

Core in position (CorInPos) — set the position to do core in. The core in can be at the start of mold close, during mold close, or at the end of mold close.

Core out position (CorOutPos) — set the position to do core out. The core out can be at the start of mold close, during mold close, or at the end of mold close.

Mold position (MldPos) — display the current position of mold.


Press Manual Core 2 in key  to do core in manually, and press Manual

Core 2 out key  to do core out.

	:mm	:bar	:%	T:s	Cnt
Core 3 In	1500.0	140	99	99.9	999
				99.9	999
Core 3 Out	1500.0	140	99	99.9	999
CorSelect	On	▼		99.9	999
CorHld	Off	▼			
CorMode	Pos	▼			
CorInPos	MldCloStr	▼			
CorOutPos	MldOpnFin	▼			
MldPos	1500.0				

		Core In	Core Out		
--	--	---------	----------	--	--

Fig 3-42 Core 2 in/out --- screen 2

On Core 2 screen 1 (see Fig 3-41), press softkey F5  to enter Core 2 screen 2. See Fig 3-42. Core 3 in/out can be set here.

The operation of core 3 is the same as described in section 3.2.6.

3.2.8 Air blow screen

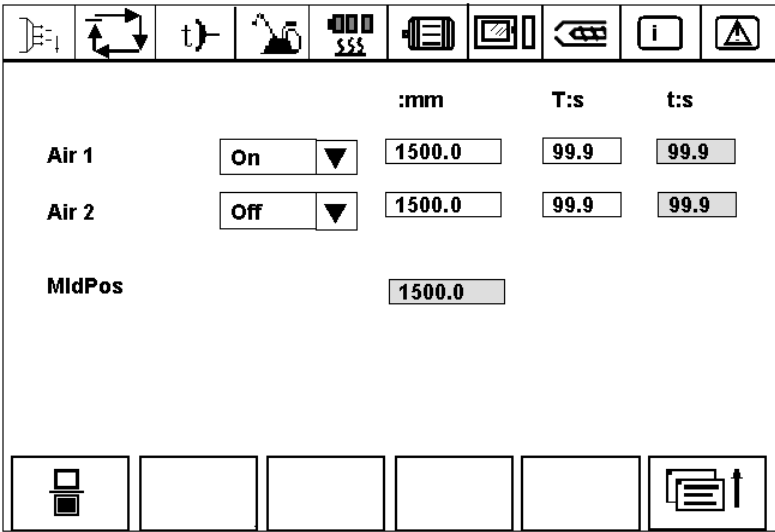


Fig 3-43 Air blow screen

Operating sequences



Press the air blow key to enter the air blow screen. See Fig 3-43.

The screen displays two statuses: Air blow 1 and Air blow 2. When the mold reaches the position, air can blow by the set time.

Air blow 1 (Air 1) — select or deselect the air blow 1. When the mold reaches the position, air blow will be controlled by the set time.

Air blow 2 (Air 2) — select or deselect the air blow 2. When the mold reaches the position, air blow will be controlled by the set time.

Mold position (MldPos) — display the actual position of mold.

Press Manual Air blow 1 **1** to activate air blow 1, and press air blow 2 **2** to enable air blow 2 function.

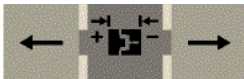
3.2.9 Mold adjustment screen

	:bar	:%		Cnt	cnt
Mld Clo	140	99	Adv Puls	999	999
Mld Opn	140	99	Ret Puls	999	999
Carriage	140	99	PulsAdj	On	▼
Ejector	140	99		T:s	t:s
Inject	140	99	MldCloTim	99.9 s	99.9 s
SuckBck	140	99	AutoAdj	Off	▼
Charge	140	99			
Advance	140	99	CurStatus	:bar	:%
Retract	140	99		140	99

Auto Start
Auto Stop

Fig 3-44 Mold adjustment screen

Operating sequences



Press the mold adjustment key to enter the mold adjustment screen.



Press Mold adjustment mode key on the operator panel to make the machine at mold adjustment status. The indicator ② on the screen (see table 3-1) is flashing to inform users that the machine is under adjustment.

The system provides two mold adjustment modes: pulse adjustment and automatic adjustment.

For pulse adjustment, users can set pulse value for mold adjustment.

For automatic adjustment, users should first set time. If mold adjustment does not finish within the preset time, then the system will retract the mold automatically.

Mold close during mold adjustment (MldClo) — in mold adjustment mode, set the pressure and flow during mold close.

Mold open during mold adjustment (MldOpn) — in mold adjustment mode, set the pressure and flow during mold open.

Carriage movement during mold adjustment (Carriage) — in mold adjustment mode, set the pressure and flow during carriage movement.

Ejector during mold adjustment (Ejector) — in mold adjustment mode, set the pressure and flow during ejector movement.

Injection during mold adjustment (Inject) — in mold adjustment mode, set the pressure and flow during injection.

Suck back during mold adjustment (SuckBck) — in mold adjustment mode, set the pressure and flow during suck back (decompression).

Charging during mold adjustment (Charge) — in mold adjustment mode, set the pressure and flow during charging.

Mold advance during mold adjustment (Advance) — in mold adjustment mode, set the pressure and flow during mold advance.

Mold retract during mold adjustment (Retract) — in mold adjustment mode, set the pressure and flow during mold retract.

Pulse of mold advance (AdvPuls) — in pulse mold adjustment mode, set the pulse of mold advance.



Pulse of mold retract (RetPuls) — in pulse mold adjustment mode, set the pulse of mold retract.

Pulse mold adjustment (PulsAdj) — select or deselect.

Mold close time (MldCloTim) — in Auto adjustment mode, set the mold close time for mold adjustment. Users can set an initial value and the system will judge it automatically. If the mold cannot be adjusted within this time, then the system will retract the mold to fulfil automatic adjustment.

Auto mold adjustment (AutoAdj) — select or deselect.

Current status (CurStatus) — display the pressure and flow of current system.

When pulse adjustment mode is selected, press advance key  and the system will run the set pulse to make the mold advance. Press retract key  and the system will run the set pulse to make the mold retract.

When auto adjustment mode is selected, press soft key F4 “Auto Start” to start the auto mold adjustment; and press F5 “Auto Stop” to end the adjustment.

<p>To</p> <p>SIEMENS NUMERICAL CONTROL LTD., NANJING, CHINA</p> <p>R&D Division</p> <p>No.18, Siemens Road, Jiangning Development Zone</p> <p>211100 Nanjing</p> <p>People's Republic of China</p>	<p>Suggestions</p> <p>Corrections</p> <p>For Publication/Manual:</p> <p>SIJECT 16i</p> <p>Operation Manual</p> <p>Software Version 1</p> <p>User Documentation</p>
<p>From</p> <p>Name</p>	<p>User Manual</p> <p>Order No.: 6AT1931-5AB41-0BA1</p> <p>Edition: 11.2003</p>
<p>Company/Dept.</p> <p>_____</p> <p>Address</p> <p>_____</p> <p>Telephone: _____</p> <p>Fax: _____</p>	<p>Should you come across any printing errors when reading this publication, please notify us on this sheet.</p> <p>Suggestions for improvement are also welcome.</p>

Suggestions and/or corrections: